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Rvan Lee Price rprice@EngagedMediaInc.com

Survive the **Unexpected**

Ever-present on the road of life is a series of blind twists and turns. Around each turn are experiences and events known to nobody. We take life one day at a time and one twist at a time. However, the quicker you travel down this road (i.e., living life only in the moment or subscribing to the concept of "you only live once"), the likelihood of being surprised by the unexpected twist increases dramatically.

Being prepared for the inevitable—hurricane season, living in "Tornado Alley," a forecasted harsh winter—is a great way of fortifying yourself against some of the twists and turns. You have a great emergency kit, and your "escape the apocalypse" plan is absolutely flawless. But there's no way you can see everything coming your way.

To some, the unexpected is a welcome spice of life, but they're the ones you see painting "Help me!" on the roof of destroyed houses. To others, the unexpected is something not to be feared but to be cautious about. One day, they're taking care of business in their office, and the next, they're struggling through a storm-swept deluge of epic proportions. But it's okay, because they have a plan, a great bugout bag, and they're wearing the right shoes.

A disaster is nothing more than a grand foray into the unknown (about the present) and the uncertain (about the future). Survivors hate those things. We like to know what's going to happen at all times. Even in our own quiet, everyday lives, we like to fill in the blanks with information.

Robert Baden-Powel, founder of the Boy Scout Movement, said of the Scout motto, "Be Prepared ... the meaning of the motto is that a scout must prepare himself by previous thinking out and practicing how to act on any accident or emergency so that he is never taken by surprise."

So, how can one survive the unexpected if its very nature can't possibly be imagined? As Baden-Powell suggests, you'll have to rely on your skills as a survivor and your abilities to adapt to an ever-changing world by always considering the worstand best-case scenarios.

When faced with the unexpected, remember that you are stronger than you realize. Think of your mind as your most fundamental and important emergency kit. In it, you have a great deal of what you'll need to survive already, but there is always

Keep in mind that disasters start suddenly and end slowly. Surviving is being prepared to overcome and outlast the calamity. But also take into consideration that disasters often lead to permanent change. In that sense, they're never quite over, and you must be prepared to face that, as well.

Don't assume the worst or the best when confronted with a challenge, but keep an alert mind on the actual events as they unfold around you. Be prepared to reevaluate and change your plans again and again, because you never know what life might throw at you.

The road is always twisting.





December 2015

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ITEM #03-0219

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ITEM #08-3188

Heavy duty 20 (5 gal.) fuel can. The attached neck has a heavy duty gasket cap with no parts to lose. Fits in all military style gas can carriers. Grade 2, Issued Good condition with minor dings and slight rust.

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ITEM #08-1091

Provides approximately twenty hours of burn time on a fully-filled tank. Runs on kerosene or other cool-burning lamp fuel. Made with crack-resistant glass. Includes a thermal heat-resistant borosilicate glass globe, wick, tank and a selfventilating hood. Measures 12"L x 51/2"W x 51/2"H

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ITEM #08-6958

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AK-47 MAG SHOULDER POUCH

ITEM #08-8371

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7"L x 8""W x 3"H.

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ITEM #08-1086

Holds 5 gallons (20 liters) of water. The convenient molded carry handle provides easy transport. Measures 13 1/2"L x 18"W x 7"H size, weighs less than five pounds (empty).

REG. \$19.95

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ITEM #08-0780

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ITEM #09-0057

The best survival food supply is one that you grow yourself! All seeds are heirloom non-hybrid. Enough seeds to plant a basketball court size garden packed in a #10 can. 25 packages of garden seeds. Instructions are included.

SEED PACKS INCLUDED

- Beets
- Cabbage
- Carrots
- Cucumbers
- Lettuce
- 1 Onion
- Swiss Chard 1
- Butternut Squash 1
- Turnips 1
- Radish
- Zucchini
- Tomatoes
- Peppers
- Peas 4 Corn
- 4 Green Beans



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ITEM #11-0038

Be prepared for any disaster with food, water, shelter light and heat. All packed in our easy to find, easy to carry, Orange and Grey shoulder bag.

- Information Sheet
 - 3600 Calorie
- 3-Day Food Bar
- Snack Items
 - 4oz Pouches of
- Drinking Water 1 Qt Canteen 1
- Sierra Cup
- Tube Tent
- Emergency Space Blanket
- 12 Hour Light Sticks
- 50 Hour Candle Box Waterproof Matches
- Hand Warmers
- 13 Function Pocket Knife
- Minor Medical First Aid Kit

REG. \$69.95









NEW12.15 PRODUCTS



Multitool Flashlight

The LifeLight from Cynergy has just about everything needed to help you survive an emergency at home, in your vehicle, while outdoors, or ... well, everything for anything anywhere. It includes a flashlight with a bright LED beam, seatbelt cutter, compass, phone charger, and window breaker. It also has alarm flashing capabilities.

Specifications

- $\cdot\,\text{one lithium ion battery}$
- · waterproof
- •10.8 inches long
- $\boldsymbol{\cdot}$ average life: 1,000 hours

Cynergyhome.com MSRP: \$34.95



Vacuum Sealing After the Hunt

You've hunted and gathered and got game. Now, what? Enter the FoodSaver GameSaver Big Game vacuum sealing system. It can be used repetitively—for up to 80 consecutive vacuum seals—to preserve up to 240 pounds of game.

Specifications

- · extra-big, removable drip tray
- $\cdot \, \text{carrying handle for travel} \\$

Foodsaver.com MSRP: \$199.99



3

Your Pants Are Quiet

We all want weatherproof and breathable raingear. But how about those qualities while being uber-quiet, especially if you're trying to go undetected? The Silent Storm rain shell jacket and pants have three-layer,

windproof/breathable/waterproof stretch fabric, YKK Aquaguard zippers, and articulated sleeves and are lightweight and easily packable.

Specifications

- available colors: Realtree Xtra and Mossy Oak Country
- DuPont Cerenol™ dot-matrix membrane
- two hand-warmer pockets in rain shell and pants
- · sizes up to 3X

Walls.com MSRP: rain shell, \$279; pants, \$249 CAN'T GET ENOUGH ASG?
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Multitasking Kayak

The Big Rig from Jackson Kayak it's a kayak; really, it's a kayak. It's one that's stable enough for you to stand in, so it's ideal for fishing expeditions. And it's set up for productive time on the water: There's a mesh seat, retractable casting brace that can be a stabilizing point, and a paddle stager to prevent having to put the paddle down. Other useful components include a beverage holder, molded-in inserts for GoPro and Ram mounts, gear tracks, a skid plate, storage, and adjustable foot pegs.

Specifications

- · 13 feet, 2 inches long
- · 37 inches wide
- · weighs 92 pounds without the seat
- · rudder-ready

Jacksonkayak.com MSRP: \$1,749



Weather App

Want AccuWeather on the go? There's an app for that. The AccuWeather app includes AccUcast—a crowd-sourced, realtime map with global weather conditions-and MinuteCast for minute-by-minute precipitation forecasts detailed right down to your exact GPS location. It

provides information about precipitation type, intensity, and timing. There are pushed severe weather alerts and even animation for tracking a storm's path.

Specifications

- · customizable weather details
- interactive
- Apple watch support
- · forecasts favorite locations

itunes.apple.com MSRP: free, but \$3.99 for no ads

Solar-Powered Lantern

Greenlight Planet is behind this Sun King PRO solar-powered lantern that features a 5.5-volt USB port for powering your phone or other device. You can also charge the light without a solar panel. Additionally, a meter displays charging effectiveness (ranked 1 to 5), so you can sort out the best panel placement.

Specifications

- · 165 lumens
- battery level indicator
- · water-resistant enclosure
- · works on wall, ceiling, or as flashlight

Greenlightplanet.com MSRP: \$49.99





NEW12.15 PRODUCTS







Z

Dog Tie-Down

When you bug out, it means your dog is coming, too. But how are you supposed to secure him at camp, along the trails when you're backpacking, or even while cooking? The PetAnchor has all those solutions. The PetAnchor company borrowed the concept of medical-grade orthopedic screws—that is, the screws' design prevents them from backing out of a bone; therefore, the PetAnchor won't back out of the ground as your dog tugs/pulls on it. There's also a loop of wire to allow your dog to run in circles, but the loop won't get caught in the anchor.

Specifications

- · screws into the ground
- · stainless steel hardware
- in compacted ground, use a ¾-inch socket

PetAnchor.com MSRP: \$18.95

8

Comfort Sleeping Bag

Kelty introduces a new line of sleeping bags: Tru.Comfort. They offer more room—which means you can actually sleep with your knees tucked up, and on your side and roll over. A comfort-tuck zipper allows your feet to stick out, and the two-layer blanket system lets you regulate the temperature.

Specifications

- regular, long, and woman'sshape sizes
- oversized hood
- 20 degree (F) rating

kelty.com MSRP: \$120



Apocalypse Kit

Assembling your "apoca-prep" kit piecemeal can be a pain, so Gerber offers the Apocalypse Survival Kit. Housed within a durable canvas case are seven tools: Gator machete, Camp Axe II, Gator Machete Pro, Parang machete, and the LMF II Infantry, DMF Folder, and Epic knives.

Specifications

- · case with handle
- · stud buttons to keep case rolled
- Gerbergear.com MSRP: \$349

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Rugged Phone

The Cat S40 was designed for people working in construction, but you can see how this design suits us survival folks, too. The Cat S40 is water-, dust-, and shockproof, has a bright display for readability in sunlight, wet finger tracking tech, and glove-on working tech. In fact, waterproof warning sensors let you know when the phone isn't waterproof (and will show how to fix it), and there's a large-capacity battery.

Specifications

- · drop-tested up to 6 feet onto concrete
- · Cat-branded, rugged accessories
- dedicated app store for outdoors activities

Catphones.com MSRP: \$399

Rinse-Free Bathing

When access to water is a problem, rinse-free products from Carex Health Brands can take care of personal hygiene tasks. The line includes body wash, shampoo, conditioner, and more. Dirt and oil get removed from hair, and everything is pH balanced.

Specifications

- deodorizes
- · contains aloe vera
- · size range: 8 to 18 ounces

Carex.com

MSRP: starts at \$5.99









Easier Towing

If your journey takes your bugout vehicle off road or off the beaten path, look into the Ark XO Trailer Jack. It's a heavy-duty, swivelwheel trailer jack that features off-road tread, a durable design, and engineering specific to performing in mud and sand. The wheels have sealed bearings for protection in case of submersion. The Ark XO Trailer Jack doesn't have to be welded, so it can be shared with other trucks or other trailers in your group.

Specifications

- · compatible with lifted trucks
- · stows up and away or can be left on
- · adjustable jack

Arkportablepower.com MSRP: \$249

I E W SNOTES



High School First to Use

Active Shooter Technology

A high school in Columbus. Ohio, is installing Battelle's SiteGuard Active Shooter Response system, which goes beyond systems that detect and alert. This technology automates 911 calls and mass notifications, has evacuation and shelter-in-place guidance, allows for automated or remote manual closing/locking of doors, and keeps relaying information to first responders. Reynoldsburg City Schools will also have this system set up to work in tandem with the video system to help track a shooter in a building.

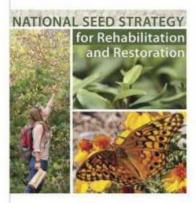
Drone Development for Weather Forecasting

The universities of Oklahoma, Nebraska, and Kentucky have been awarded \$6 million via a four-year grant to develop weather-researching drones. The project will be led by Oklahoma State University (OSU) with an eye toward small, affordable, unmanned systems for the government, private companies, and university scientists to better understand atmospheric conditions and get better at weather forecasting. OSU has a strong reputation for developing unmanned craft, while Nebraska's a pro at atmospheric physics. Kentucky's the whiz in sensor tech and systems integration. (In case you wondered, we currently collect this kind of data from radar and ground-based tools.)

App for Stress Relief

There's an app that had been used as resilience training for military personnel, but it's now available for anyone with an iPad. The Stress Resilience Training System app helps with development of self-regulation skills when you're in a stressful environment or have stress exposure, such as at work or home. There's also a sensor available for heart rate biofeedback (sold separately through trainresilience.com).





It's a Real Thing: **National Seed Strategy**

The Department of the Interior, along with the Plant Conservation Alliance and the U.S. Department of Agriculture. has recognized that wildfires—as well as drought, storm, and invasive species—are destroying landscapes across the West. The answer is the launch of the National Seed Strategy as a way to rehab, restore, and guide ecological restoration. Its motto is simple: "To protect native plants by ensuring that native plant populations and their communities are maintained, enhanced, and restored." This means that not only will our nation's wilderness areas remain heautiful and natural, but it will encourage additional plant growth and the return of native wildlife. For those in survival situations, any additional plant life and wildlife will mean more options on the food chain and more chances to survive.

Boston Gets \$350K for Climate Change

Boston received \$350,000 from the Commonwealth of Massachusetts in order to work on climate preparedness. The money came as part of the state's Office of Coastal Zone Management's Coastal Community Resilience Grant Program and will be used to support the Boston Climate Preparedness Planning Initiative, set to come up with ideas for how to keep the area thriving, despite climate uncertainty.



FIU's Free Online Hurricane-Prep Course

In an effort to empower communities along the Atlantic and Gulf coasts when it comes to hurricane preparedness, Florida International University (FIU) has created the Emergency Preparedness MOOC (massive open online course). It's free and available to anyone with Internet access. Viewers will learn how to create an emergency kit, protect their homes and families, determine flood risk, develop a communication plan, determine how much water should be on hand, and much more. There's even a video with Roary the Panther, FIU's mascot, Visit http://prep.fju.edu for more information.



What Law Enforcement Thinks Is Key Threat to U.S.

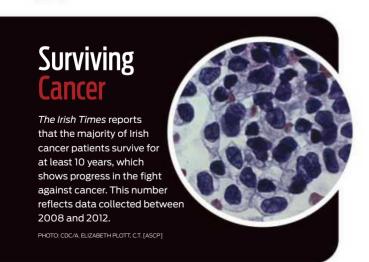
A study published by the Triangle Center on Terrorism and Homeland Security found that law enforcement agencies in the United States believe anti-government violent extremists—not radicalized Muslims—pose the most severe threat of political violence. The survey was conducted with the Police Executive Research Forum in 2014 with funding from the National Institute of Justice. Of the 382 law enforcement agencies surveyed, 74 percent indicated that anti-government extremism was one of the top three terrorist threats. The other two were al Oaedarelated extremism or like-minded organizations and environmental extremism.

EV SNOTES



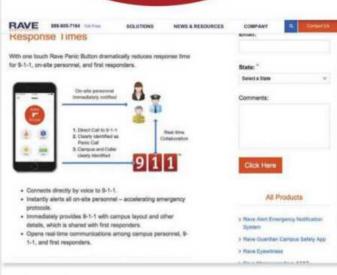
New PrepareAthon Website

A new website has debuted that's essentially one-stop shopping for preparedness: You can find resources about winter storms, earthquakes, and floods and learn how to prepare on behalf of your community. There's even a "stories" section in which you can read firsthand accounts of survival and about disasters. Find it at community.fema.gov.



Thin Women: Key to Survival of Human Race?

A study by Scotland's University of Aberdeen has pointed to "evolutionary fitness" as the reason men find thinner women more attractive. It seems men associate this figure type with youth, fertility, and health. This goes against what had been the predominant theory before: that body types with more fat were appealing because they could historically survive a famine. Evolutionary fitness seems to lean on the idea that we are hard-wired for two purposes—future survival and the ability to reproduce. Scientists are next going to study how attractiveness in men works.



Schools Get Panic Button

Arkansas public schools are getting a new safety program, the Rave Panic Button. This smart phone app allows faculty and staff to let 911, first responders, and school personnel know what kind of emergency is taking place—say, an active shooter or fire—and first responders will gain automatic access to the school's floor plans and locations of emergency exits.



FREEZE DRY ANY FOOD AT HOME

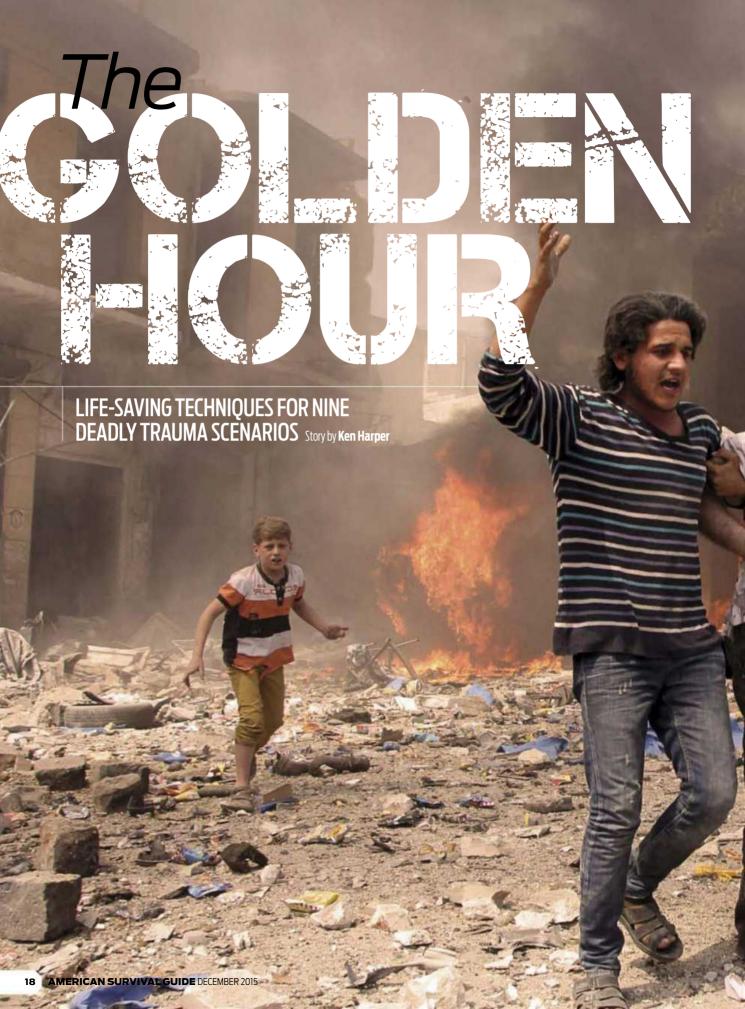


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GUN SHOT TRAUMA

If you have taken any type of first aid training, you are familiar with the term,

"ABC"—Airway-Breathing-Circulation. If you find yourself treating the victim of a gunshot wound in a survival situation without EMS services, your first priority is addressing circulation.

How to treat:

- > Stop the bleeding. Direct pressure, elevation, and a pressure bandage (in that order) usually work for most extremities. The Israeli Emergency Bandage or Olaes Modular Bandage would be good choices if one is available. You can improvise with a towel, bandana, or shemagh (alternatively, shemage. This is a headcloth designed for a desert environment to protect the wearer from sand and heat). If direct pressure does not stop the bleeding, a hemostatic agent such as Quick Clot or Celox can be applied with direct pressure.
- > Treat for shock. You should be doing this as you're doing the other steps. Cover the victim for warmth. Keep them covered unless there's a reason not to, such as if you are checking for wounds.
- > Look over the entire body for wounds. You can't just depend on looking for entry and exit wounds, thinking you know where the bullet has traveled. Sometimes, the bullet can hit a bone, break into fragments, and stray anywhere in the body. In fact, some types of bullets are designed to cause multiple injuries.

For a gunshot wound in the arms or legs, consider bones.

How to treat:

> Direct pressure, elevation, and pressure bandage—in that order. Elevate the wound above the heart, and apply a pressure bandage. If it's still bleeding, take your fingers and apply pressure to the brachial artery for the arm or the femoral artery for the leg.

- > If all else fails in an extremity, go to a tourniquet. It may come down to "lose a limb, or lose a life."
- > If the area is rapidly swelling, that's a sign of internal bleeding. Also, consider that a bone might have been injured or even shattered. If you suspect this, the area needs to be splinted.

For a gunshot wound in the abdomen, consider organ protection.

How to treat:

- > If the wound is open and you can see the intestines, find a moist, sterile dressing to place on top of the wound (to protect the organs). If the intestines are ripped open and the victim does not get immediate medical care, they will likely bleed to death or die from the severe infection that will probably ensue.
- > The victim should take nothing at all by mouth until the pain lets up and then wait a day or two. This is obviously a difficult situation, but this step is very important and is a time when a slow drip of IV fluids would be useful.

For a gunshot wound in the chest, consider air sucking and spine injury.

How to treat:

- > Open chest wounds are also called "sucking chest wounds," because they suck air in and can lead to a collapsed lung. You can help stop the sucking by closing the open wound with an occlusive dressing. Improvise with a plastic bag taped on three sides if you do not have access to a commercially produced chest seal.
- > Remember that the spine is also included in the back of the chest. Be very careful about movement of chest wound victims. Keep them as still as possible in order to avoid damaging the spinal cord. If the heart, lungs, spine, or a large blood vessel is damaged, there's not much you can do in a survival situation if immediate expert medical care is unavailable.
- > In most circumstances, don't remove an implanted bullet. It's almost impossible to find, and it might actually be plugging a big blood vessel. (Thousands of military members live daily with shrapnel in their bodies.) Unless there's initial infection from the wound, itself, the body adapts to most metal without many serious problems.



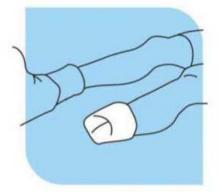




Nine Life-Saving Techniques







TRAUMATIC AMPUTATION Treatment provided for a patient who has suffered an amputation is influenced by numerous factors. Management of potentially life-threatening conditions is the first priority. Management of victims of amputations from blunt trauma is complicated by the concern about additional injuries. Blunt trauma amputations are often caused by mechanisms of high-energy transfer, such as collapsed buildings after an earthquake, auto or industrial accidents, or debris from a tornado.

These accidents often involve the potential for multisystem trauma, and you must stay alert to the possibility of other injuries. It is critical to remember that the most obvious injury is not always the most significant. Partial amputations should be assessed and treated as if they are fully intact.

If there is complete amputation and the anatomy is retrieved, without an intact EMS system, there is no chance the limb will be able to be saved for possible re-attachment.

How to treat:

- > The first priority is to control major bleeding immediately through direct pressure and elevation. Tourniquets can be used when pressure and elevation fail. Place the tourniquet as close to the amputation site as possible.
- > The next priority is to maintain and support essential life functions. Supportive measures such as airway control and body temperature can slow the onset of life-threatening shock. Using a 60cc to 100cc irrigation syringe, flush the area aggressively with a diluted solution of Betadine (povidone-iodine) or sterilized saline solution. If you don't have commercial sterile solutions, studies show that clean drinking water can keep a wound clean in an austere environment.
- > Dressings such as a saline-moistened sterile dressing placed over exposed tissue will help reduce additional contamination or injury. Cover with a dry, sterile gauze dressing. Replace the dressing at least daily; more often, if possible.
- > If an extremity is involved, it should be splinted.

How to Disinfect

Disinfection can be accomplished with the following methods:

- Wash and boil soiled linen or bandage items for five minutes.
- · Alternatively, wash, rinse, and soak items for 30 minutes in a 0.1% chlorine solution or 5% Lysol solution.
- Iron items on a table covered with a drape that has also been ironed. Dampen each item with boiled water. The iron should be hot and several passes made.
- · Hang in full sunlight for six hours per side.

"OPEN CHEST WOUNDS ARE ALSO CALLED 'SUCKING CHEST WOUNDS,' BECAUSE THEY SUCK AIR IN AND CAN LEAD TO A COLLAPSED LUNG."

HEAD TRAUMA/CONCUSSION/ SKULL FRACTURE

Head injuries can be divided into three groups:

- ✓ Prolonged unconsciousness (more than five to 10 minutes)
- Brief loss of consciousness
- No loss of consciousness

Prolonged unconsciousness: Loss of consciousness for more than five to 10 minutes is a sign of significant brain injury. Assess the victim's airway and perform rescue breathing if necessary. Because there is a potential for accompanying neck and spine injuries with severe head trauma, the victim's spine should be immobilized.

In a survival situation, you will obviously be unable to immediately evacuate the victim to a medical facility. Your only course of action at this point is to maintain spine immobilization and keep the victim's head pointed uphill. Be prepared to logroll the victim onto their side if they vomit. Continually monitor the airway for signs of obstruction (listen for noisy or labored breathing) and a decreasing respiratory rate.

Brief loss of consciousness: Short-term unconsciousness, in which the victim wakes after a minute or two and gradually regains normal mental status and physical abilities, is evidence of a concussion. A concussion does not usually produce permanent damage, although confusion or amnesia about the event and repetitive questioning by the victim are common.

At a minimum, you should keep the victim under close observation for at least 24 hours and not allow them to perform potentially hazardous activities. Normal sleep should be interrupted every three to four hours to check briefly that the victim's condition has not deteriorated and that they can be easily roused. If the victim becomes increasingly lethargic, confused, combative, is just not acting normally, or if they develop any other signs (see these under "No loss of consciousness," below), your only option without an intact EMS is to maintain and support essential life functions such as airway and breathing.

No loss of consciousness: If an individual hits their head but never loses consciousness, it's rarely serious. Although they might have a mild headache or a concussion, bleed from a scalp wound, or a have a large bump on their head, there is no cause for concern—unless they develop symptoms such as:

- A headache that progressively worsens
- Consciousness gradually deteriorates from alertness to drowsiness or disorientation. Ask the victim if they know their name, location, the date,

and what happened. If they get all four correct, they are oriented x 4.

- Persistent or projectile (shoots out under pressure) vomiting
- One pupil becomes significantly larger than the other
- Bleeding from an ear or the nose without direct injury to those areas or a clear, watery fluid draining from the nose
- Bruising behind the ears or around the eyes when there is no direct injury to those areas
- √ Seizures

Skull Fractures

Fracture of the skull is not life threatening unless associated with underlying brain injury or severe bleeding. Signs of a skull fracture include a sensation that the skull is uneven when touching the scalp, blood or clear fluid draining from the ears or nose without direct trauma to those areas, and black-and-blue discoloration around the eyes ("raccoon eyes") or behind the ears (Battle's sign—a discoloration behind the ear due to injury).

Scalp Wounds

Scalp wounds are common after head injuries and tend to bleed a lot because of the scalp's rich blood supply. Fortunately, applying direct pressure to the wound with a gloved hand can usually stop the bleeding. It might be necessary to hold pressure for up to 30 minutes.

Using a 60cc to 100cc irrigation syringe, flush the area aggressively with a diluted solution of Betadine or sterilized saline solution. If you don't have commercial sterile solutions, studies show that clean drinking water can keep a wound clean in an austere environment. Cover with a dry, sterile gauze dressing and secure with a bandage wrap. Replace the dressing at least daily; more often if possible.







Nine Life-Saving Techniques







SEVERE BURNS In a survival situation, burns often happen unexpectedly and have the potential to cause death, lifelong disfigurement and dysfunction. A survival approach to burn care focuses on clothing, cooling, cleaning, covering, and comforting (i.e., pain relief).

- > Cool the burn to help soothe the pain. Hold the burned area under cool (not cold) running water for 10 to 15 minutes or until the pain eases. Alternatively, apply a clean towel dampened with cool tap water.
- > Remove rings or other tight items from the burned area. Try to do this quickly and gently—before the area swells.
- > Don't break small blisters (no bigger than your little fingernail). If blisters break, gently clean the area with mild soap and water, apply an antibiotic ointment, and cover it with a nonstick gauze bandage. Apply moisturizer, aloe vera lotion or gel, which might provide relief in some cases.
- > If needed, administer an over-the-counter pain reliever, such as ibuprofen (Advil, Motrin IB), naproxen sodium (Aleve), or acetaminophen (Tylenol). Aspirin products should be avoided because of platelet inhibition and the risk for bleeding.

MAJOR BURNS

Protect the burned person from further harm. If you can do so safely, make sure the person you're helping is not in contact with smoldering materials or exposed to smoke or heat. With an intact EMS system, it is recommended you don't remove burned clothing stuck to the skin. In a survival situation, use copious irrigation with a large-gauge syringe to clean the burn and remove as many embedded bits of clothing as possible.

Check for signs of circulation. Look for breathing, coughing, or movement. Begin CPR if needed. Remove jewelry, belts, and other restrictive items—especially from around burned areas and the neck.

Burned areas swell rapidly. Don't immerse large, severe burns in cold water. Doing so could cause a serious loss of body heat (hypothermia) or a drop in blood pressure and decreased blood flow (shock). Elevate the burned area. Raise the wound above heart level, if possible.

All partial- and full-thickness burns should be covered with sterile dressings. A fine mesh gauze (e.g., Telfa) should be applied after the burn has been cleaned and a thin layer of topical antibiotic has been applied.

Recommended frequencies for dressing changes range from twice daily to once a week. Dressings should be changed whenever they become soaked with excessive exudate or other fluids. At each dressing change, the topical antibiotic should be removed as completely as possible by using gentle washings. Then, new antibiotic should be re-applied, along with a new dressing.







12.15







EMERGENCY TOURNIQUET APPLICATION

- The objective of emergency tourniquet use is to extinguish the distal (that is, a location situated away from the center of the body or from the point of attachment) pulse, thereby controlling bleeding distal to the site of tourniquet application.
- Tourniquets provide maximal benefit the earlier they are applied following difficult-to-control extremity hemorrhage.
- Improvised (windlass) tourniquets should be applied only when scientifically designed tourniquets are absent. A windlass is a lever that can be wound to tighten a tourniquet.
- Tourniquets work better when applied distally (forearms and calves) than when applied more proximally (upper arms or thighs).
- Remove clothing and other underlying materials prior to tourniquet application (when possible) to ensure a tight and secure tourniquet fit.
- Remove the clothing surrounding a tourniquet to enable identification of all surrounding wounds and injuries.
- Do not apply tourniquets directly over joints,
 because compression of vascular structures and
 bleeding control are limited by overlying bone.
- If one tourniquet is ineffective, side-by-side (in sequence longitudinally), dual tourniquet use might be effective.
- Mark the time the tourniquet was applied with a permanent marker and in plain sight.

CHEST TRAUMA/COLLAPSED LUNG

There are numerous types of possible thoracic injures one would encounter in a survival situation—from gunshot/knife wounds to falling debris and impairment. These injuries require immediate recognition and treatment. Here are some ways to recognize chest trauma:

Patients with a pneumothorax (holes in the lungs) will experience respiratory distress, including dyspnea (difficult breathing), tachypnea (rapid breathing), and tachycardia (rapid heart rate). They might also have decreased or absent breath sounds on the side of the chest with the pneumothorax. Additionally, pain with breathing is a frequent complaint.

A closed pneumothorax is associated with a trauma, either blunt or penetrating, in which the chest wall remains intact (i.e., no external wound). This is often explained by a broken rib that punctures the lung tissue. The signs and symptoms of a closed pneumothorax don't differ much from other pneumothoraxes—that is, respiratory distress and possibly decreased or absent breath sounds on the affected side.

Chest decompression is simply releasing the air trapped within the pleural cavity. The fastest means of doing this is by needle decompression. The needle should be inserted perpendicular to the chest wall, between the second and third ribs, counting from the top) and not angled toward the mediastinum (the mass of tissues and organs separating the sternum in front and the vertebral column behind, containing the heart and its large vessels, trachea, esophagus, thymus, lymph nodes, and other structures and tissues). Avoid injuring any of the mediastinal structures. If successful (and the scene is quiet), you might hear a rush of air.

A sucking chest wound is a special type of pneumothorax. In a sucking chest wound, air is sucked into the thoracic cavity through the chest wall instead of into the lungs through the airways. This occurs because air follows the path of least resistance. The wound to the chest will normally bubble blood with breathing in and out.

How to treat:

> Place an occlusive dressing on the chest wound. Treatment of a sucking chest wound includes placing an air-occlusive dressing over the site and taping it on three sides.

SEVERE CUTS AND PUNCTURE WOUNDS In technical terms, deep wounds are those that cut deeper than 1/4 inch beneath the surface of the skin. Because they go so far below the surface of the body, these wounds are much more likely to cause damage to a ligament, major blood vessel or artery, tendon, or an organ. The depth can also cause both internal and external bleeding. Deep wounds are most commonly cuts or puncture wounds.

Before dealing with a wound, protect yourself and the victim from bloodborne illness by putting on a set of nitrile gloves. Alternatively, you can improvise with plastic bags, a towel, etc.

How to treat:

- > Direct pressure: Press on the injury with your hand and elevate above the heart. If this stops the bleeding but it starts again when you release pressure, make a pressure dressing and apply direct pressure to a pressure point.
- > Upper arm/elbow wounds: Access the brachial artery, which is located on the inner side of the arm above the elbow bone between the large upper arm muscles.
- > Groin/thigh wounds: Find the femoral artery in the middle of the bottom crease of the groin, between the groin and the upper thigh. This is also known as the "bikini line." This artery may require substantial pressure; press down with the entire heel of your hand to reduce circulation.
- > Lower leg wounds: Press the back of the knee directly behind the kneecap to access the popliteal artery. Do not bend or move the leg to put it in a more convenient location. Reach around to the back of the leg and press up.
- > Hand/feet wounds: On the inside of the wrist, move away from the thumb toward the tip of the forearm. For foot wounds, trace above the front/top of the foot right where it meets the shin. In both cases, do not forget to feel for a pulse before applying pressure. If neither of these things works, apply a tourniquet. Tighten it until the bleeding stops.

(Attitudes about tourniquets began to change in the 1990s, but the real turnaround came during the later years in Iraq and Afghanistan. The tourniquets that proved effective were commercial devices, especially the Combat Application Tourniquet (C-A-T) and SOFFT, which many studies have found to safely and effectively stop blood flow with a low incidence of adverse events.)

A tourniquet can be left in place for two hours with minimal morbidity to the effected extremity. Morbidity is unclear between two and six hours; however, more than hours in a survival situation, and the likelihood of limb loss is all but certain.

Alternative Suturing Methods

A number of materials can be substituted for commercial suture material in an austere situation. Possible suture materials include fishing and sewing nylon, the inner strands of 550 cord, dental floss, and cotton. In an absolute worstcase scenario, sutures can be made from horsehair or homemade "gut" sutures. The latter two should only be considered in an absolute worstcase scenario. If you only have improvised suture material available, you should seriously consider if suturing is the right thing to do, because anything that is organic has a much greater chance of causing tissue irritation and infection

STAPLES: Staples can be used interchangeably with sutures for closing skin wounds. They are equally as effective and very easy to apply. Their main drawback is that from a cosmetic standpoint, they are inferior to sutures. They are also very expensive. They come in several sizes, ranging from 10 staples to 100.

GLUE: Glue is useful for small, superficial skin lacerations; that is, lacerations of only partial thickness or just into the subcutaneous layer. When used correctly, glue provides equivalent tensile strength to sutures. It should not be used around the eyes or mouth, and it is less effective in hairy areas. There are several brands of glue available (for example, Dermabond).

HAIR TYING: Hair tying is not perfect but has been successfully used for scalp lacerations. The wound should be cleaned, and hair along the edges of the wound formed into bundles. Then, the opposite bundles of hair are tied across the wound to bring the edges together. After five to seven days, the hair can be cut from the wound edges.







SHOCK Shock may be

Shock may be caused by severe or minor trauma to the body. It is usu-

ally the result of:

- ✓ Significant loss of blood
- Heart failure
- Dehydration
- Severe and painful blows to the body
- Severe burns of the body
- Severe wound infections
- Severe allergic reactions to drugs, foods, insect stings, and snakebites

Shock stuns and weakens the body. When the normal blood flow in the body is upset, death can result. Early identification and proper treatment might save the victim's life.

Signs/Symptoms of Shock

In a survival situation with a victim of a traumatic injury, assume that shock is present or will occur shortly. By waiting until actual signs/symptoms of shock are noticeable, you might jeopardize the victim's life.

Examine the victim to see if they have any of the following signs/symptoms:

- Sweaty, but cool, skin (clammy skin)
- Pale skin
- Restlessness, nervousness
- ✓ Thirst
- Loss of blood (bleeding)
- Confusion (or loss of awareness)
- Faster-than-normal breathing rate
- Blotchy or bluish skin (especially around the mouth and lips)
- Nausea and/or vomiting

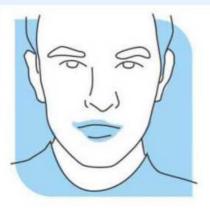
How to treat:

- > Do not move the victim or their limbs if suspected fractures have not been splinted.
- > Lay the victim on their back.
- > Elevate the victim's feet higher than the level of their heart. Use a stable object (a box, back pack, or rolled-up clothing) so their feet will not slip off.

Warning: Do not elevate legs if the victim has an unsplinted broken leg, head injury, or abdominal injury. Splint, if necessary, before elevating their feet. For a victim with an abdominal wound, place knees in an upright (flexed) position.

- > Loosen clothing at the neck, waist, or wherever it might be binding.
- > Prevent chilling or overheating. The key is to maintain body temperature. In cold weather, place a blanket or other like item over the victim to keep them warm and also under them to prevent chilling. However, if a tourniquet has been applied, leave it exposed (if possible). In hot weather, place the casualty in the shade and avoid excessive covering.
- > Calm the victim. Throughout the entire procedure of treating and caring for a victim, you should reassure and keep them calm. Be authoritative (take charge) and show self-confidence. Assure the victim you are there to help.
- > Do not give the victim any food or drink. If you must leave the victim, or if they are unconscious, turn their head to the side—that is, if there is no evidence of neck or back injury—to prevent them from choking should they vomit.

"WHEN THE NORMAL BLOOD FLOW IN THE BODY IS UPSET, DEATH CAN RESULT."







Nine Life-Saving Techniques







COMPOUND FRACTURES The basics of fracture manipulation are fairly straightforward. You need to correct any angulation of the bone (i.e., straighten the bone). After that, you need to pull it to length and keep it at length, if required, and then immobilize it while the bone heals (between about six to eight weeks).

The main problem is that this is extremely painful to do. In the case of a thigh bone (femur), another problem is overcoming the action of the thigh's very strong muscles, which act to try and shorten the bone. Maintaining length on the femur will require weighted traction for at least several weeks to overcome the muscle action. The options for splinting a limb and/or establishing traction are many and varied, but the basic principles already described above are the same.

Fractures in which the bone is in multiple fragments are less likely to heal well in a survival situation without advanced medical care. In a survival situation, fractures that break through the skin (compound fractures) will almost certainly become infected. A compound fracture requires that the bone ends and wounds be thoroughly washed out. Standard fracture management principles are then applied, and high-dose antibiotics administered, if available. (A compound fracture was one of the most common causes of limb amoutation prior to antiseptics and antibiotics.)

Disclaimer: Use of the information in this article is at your own risk and intended solely for self-help in times of extreme emergencies when medical help is not available and life and death are in the balance.

Classifications

)) Burns are classified based on how deeply and how severely they penetrate the skin.

First-degree burns affect only the outer layer of skin (epidermis). The burn site is red, painful, dry, and has no blisters. Mild sunburn is an example. Long-term tissue damage is rare and usually consists of an increase or decrease in the skin color.

- The skin is usually red.
- · Often, there is swelling.
- Pain is sometimes present.

Second-degree burns involve the epidermis and part of the dermis layer of skin. The burn site appears red and blistered and may be swollen and painful.

Partial-thickness burns:

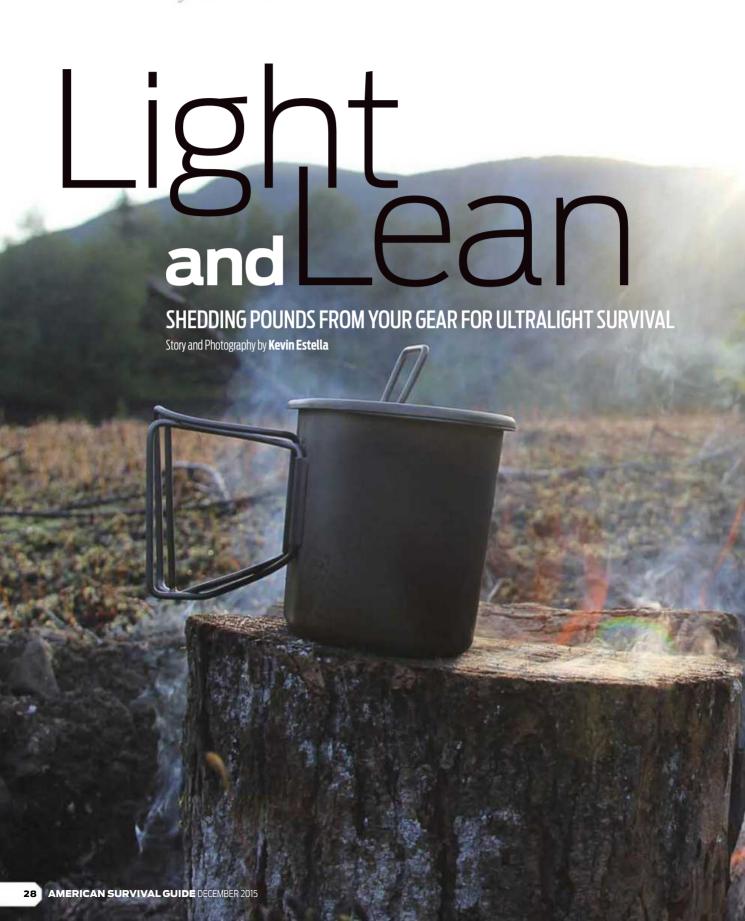
- Possible blisters
- Involve the entire epidermis and upper layers of the dermis
- Wounds will be pink or red in color, painful, and appear to be wet

- Wound blanches when pressure is applied
- Should heal in several weeks (10 to 21 days) without grafting; scarring is usually minimal

Full-thickness burns:

- · Can be red or white in appearance, but will appear dry
- Involve the destruction of the entire epidermis and most of the dermis
- · Sensation can be present but diminished
- Blanching is sluggish or absent · Will most likely need excision
- and skin grafting to heal

- · Third-degree burns destroy the epidermis and dermis and might go into the subcutaneous tissue. The burn sites may appear white or charred
- · All layers of the skin are destroyed
- Extend into the subcutaneous
- · Areas can appear black or white and will be dry
- · Can appear leathery in texture
- · Will not blanch when pressure is applied
- · No pain



"BIGGER IS NOT ALWAYS BETTER IN SURVIVAL TRAINING, AND INSIGHT INTO YOUR ABILITY CAN BE LEARNED BY GOING LIGHTER."

f you're in shape, you might find it easy to run. A leisurely jog around the block or on the treadmill at the gym is no sweat. It's not unusual to believe your body is capable of doing anything. After all, it's simply putting one foot in front of the other. Try it. Start running flat out, but then do it over rough, rocky terrain in the dark ... and imagine that you don't know where you're going. Now, add that you're completely terrified.

Now, consider your gear. The 20 pounds of equipment on your back that you thought would be essential when you packed it at home will soon feel like 20 tons. In a survival situation during which you are traveling a great distance and you are trying to do it quickly, every ounce of gear you have stuffed in your bugout bag or emergency pack will soon sap more and more of your energy.

Consider a weight-loss program ... for your gear.

GETTING STARTED—ULTRALIGHT SURVIVAL TRAINING

To stay ahead of the curve, I recently challenged my associates to cut the weight of their gear to a mere 10 pounds for a three-day weekend trip. By industry standards, "ultralight" translates to fewer than 10 pounds—excluding water, food, and fuel. By comparison, "superlight" is fewer than 5 pounds.

What started off as a challenge proved to be a learning experience that ultimately impacted perspectives, as well as the gear carried, when weight has less of a bearing on the decision about what to pack.

The obsession with weight set in quickly when my group was presented with this ultralight backpacking challenge. Traditional bushcraft style dictates carrying canvas, wool, and leather kit items on trips—with little to no attention paid to their weight.

This trip would challenge those in my group who rely on traditional gear for its rugged construction and durability in the field. Options such as titanium, sil-nylon, and carbon fiber became more viable for this challenge. The strict maximum of 10 pounds gave me tunnel vision, and all I could think of was how to shave ounces off every individual item I carried. It was a daunting task, but I applied a logical order of thinking and focused on the essentials first. Faced with all the items in my standard load out in front of me, I started from scratch and built my ultralight kit from there.

Warning: If you're looking to go light, it can be costly, as many of my guys found out.



A quality pack is a must for the ultralight hiker.
I usually carry a Kifaru Tailgunner and/or a Zulu pack.

These heavy-duty, Cordura nylon packs have survived the worst conditions—thanks to their construction—but the tradeoff is weight. Because the weight carried for this particular weekend was 10 pounds and under, I could cut bulk and ultimately, weight, in the suspension and padding. I could also reduce or eliminate lashing points, MOLLE panels and extra compression straps.

In the end, I settled on a very lightweight pack from Outdoor Research called the DryComp Summit Sack. At less than a pound (11 ounces), it has just enough space for my gear and features tabs to run a bungee shock cord through for attaching lightweight gear to the exterior. The Outdoor

Research pack is a large rucksack, and I could use lightweight ziptop bags for organization where zippered pockets were cut.



A day hiker should have no trouble packing ultralight, but the weekend backpacker sees pack weight increase once sleeping accoutrements are added to the load out. Given the choice of sleeping pads on the market, the best option is a standard closed-foam mattress such as the Thermarest Ridgerest (14 ounces). This pad insulates from below. A lightweight and small, one-person tarp (in this case, the Snugpack Stasha) protects from the elements above. Used in conjunction with a silnylon bivy (7.4 ounces) sack, such as those available through Titanium Goat, and a single blanket or quilt, such as the Woobie by Kifaru, sleeping arrangements are covered.

In addition to shelter components, I pack a lightweight watch cap, gloves, and mosquito head net for sleeping on the ground. With these items, I can protect my hands and head from mosquitos and insects that could otherwise ruin a good night's sleep. Also, even though the kit is ultralight, these simple comfort items' value far surpasses their weight.

FIRE

Regardless of weight, multiple means of making fire should be carried for redundant safety. As a standard, I pack a good ferro rod, along with a lighter and storm-proof matches. In my lightweight kit, the size of the ferro rod, lighter, and container of matches decreases while retaining the ability to make fire—albeit in a lighter and more compact package. Some of the participants noted how, under ideal circumstances, lightweight firestarters accomplish the task but, given the choice, the larger the rod, the better for stress-induced firestarting.

SIGNALING

To satisfy the most basic signaling needs, I pack a whistle and mirror in every kit I carry. For ultralight travel, the smallest whistle and mirror combination I could find is made by UST Brands. The StarFlash Micro Mirror and JetScream Micro Whistle together weigh under an ounce and provide peace of mind for emergency communication. A 6-foot length of flagging tape adds under an ounce of additional weight and helps with marking trails and







"A DAY HIKER SHOULD HAVE NO TROUBLE PACKING ULTRALIGHT. BUT THE WEEKEND BACKPACKER SEES PACK WEIGHT INCREASE ONCE SLEEPING ACCOUTREMENTS ARE ADDED TO THE LOAD-OUT."

locations. Rounding out our signaling load-outs were our cell phones. Even for EDC, a near-7ounce phone is essential and effective as a signaling device (when there is cellular service).

KNIFE

More than one Appalachian Trail through-hiker has stated that the only knife he/she carried and needed was a Victorinox Classic. For those unfamiliar with this pocket knife, it is the smallest Swiss Army keychain knife produced. When asked what they used the knife for, each hiker said, "only cutting open freeze-dried food packages."

The Victorinox Classic is a great pocket knife for a keychain and an excellent choice for the weight conscious, but it is a poor substitute for a true field knife meant for any real utility task. Superlight hikers will opt for a single, hardbacked razor to cut weight even further.

The knives we normally carry are difficult to give up in exchange for lighter-weight options. Substantial stock thickness and palm-filling grips give peace of mind when using your knife hard. To cut weight, I examined the knives I normally carried and looked at the minimal dimensions necessary in the field.

I swapped out my full-sized Leatherman 300 multi-tool for a Leatherman Squirt, and my Bark River Bushcrafter was exchanged for the Ultra-light bushcrafter. The full-sized pairing weighs in at 12 ounces, while the ultralight combo is only 6.4 ounces. If I wanted to cut weight even more, my folding neck knife is only 2.7 ounces.

Ultralight to heavyweight, a knife is the most important item in your tool kit; and a real knife puts my mind at ease much more than a small pocket knife.

FIRST AID/SAFETY

First aid equipment is important in any emergency kit or backcountry load-out. The absolute, bare-bones ultralight kit is my bandana, adapted from my EDC. Folded like a cravat, it can be used as a pressure bandage, dressing, or sling. In addition, sample packets of triple antibiotic ointment are widely available, and minor "ouchie-booboo" kit items are too light not to pack. Given the exposed nature of ultralight camps, a good insect repellent should be carried, as well.

A word of advice: When pushing your comfort level into the red zone, always designate one person to be in charge of safety and first aid. In this case, one of the participants who hosted the weekend campout is a nurse and former Army medic who laced the trail we hiked with emergency supplies—just in case.

CORDAGE/UTILITY

Parachute cord is the gold standard survival cord by which all others are judged. In my ultralight pack, I reduce the amount of 550 cord and increase the amount of lesser-tensilestrength lines. Around 25 to 50 feet of 550 parachute cord is divided into shorter hanks. For estimation of weight, remember that 10 feet of paracord weigh 0.8 ounce.

A smaller tarp does not need a large space between trees to run a ridgeline; therefore, less



CHOICES

"Wistern a choice, the vast majority of out-doorsmen would prefer full-sized, stout, and durable kit items to ultralight options. Most would take a belt knife instead of a small necker. After all, it is easy to press a large knife into small knife duty, but it is difficult—almost impossible—to make a small knife function as a larger counterpart.

The same full-size preference is true of most other gear. For example, to assure a quality night's sleep, a 3-inch-thick memory foam camp mattress is a more appealing choice than a three-quarter-length closed-foam pad.

Another case in point: My stormproof match kit from Uco weighs 1.7 ounces, and the matches in a standard Uco box weigh 0.8 ounces. My canteen kit from Heavy Cover weighs 11 ounces empty—but, filled with water, it weighs an extra 2.5 pounds.

Choices aren't always ours to make, though, and sometimes, survivalists must use what is at their disposal at the most inopportune time.







cordage in my pack. Simple jute twine is lightweight and can handle just about any ultralight camp lashing task. It also doubles as firemaking tinder if pulled apart and teased into a small bird's nest. For suspending even lighter gear such as candle lanterns, dental floss is all that is needed.

WATER/COOKING

"A pint's a pound the world around." This old saying speaks the truth: 16 ounces of water is 1 pound of weight. Water weight cannot be avoided, but the weight of the container can. Titanium is a popular option; I have an ultralight container/cook kit made by Heavy Cover, Inc.

Essentially a titanium USGI-style canteen, this container comes complete with a lid to maximize boiling efficiency. To supplement this, platypus bladders (0.9 ounce) are used, because they are significantly more durable than ziptop bags. Should ziptop bags be the only option available for water storage and transport, always protect their integrity with a spare t-shirt, bandana, or cloth material.

LESSONS LEARNED

Ultralight camping is not impossible; it just requires more attention to detail and sacrificing some items. Participants from this trip did their research and looked up "seasoned ultralight camper's" wisdom. My associates followed some of the tips—such as ditching stuff sacks and tent pegs—but didn't get too obsessive creating toothpaste dots (dried toothpaste portions on waxed paper) and cutting handles off toothbrushes. Additionally, to sleep warmer, they learned they would likely sacrifice gadgetry (for cooking, lighting, or camp comfort).

Also learned: At some point, safety can, but should not, be sacrificed.

On our last night, rain came in, and one participant's lightweight rainwear failed. In cooler weather, this seam failure could result in hypothermia. Again, smaller tools work well in fair weather, but when fingers suffer from lack of dexterity, larger manipulatives are better. Luckily, this trip was held under controlled situations, and even with the rain, we weren't too far from safety should a real emergency have occurred.

Ultralight Essential Needs Kit—Respective Weights

Knives
Bark River Knives Bushcrafter
with leather sheath and firesteel12 ounces
Bark River Knives Ultralight Bushcrafter
with kydex neck sheath kit
Falkniven U2 with Survival Sheath Systems sheath and mini firesteel
sneath and mini firesteel
Victorinox Ranger w/firesteel lanvard
Victoriilox Runger W/ Incateet turiyara
Fire
Mini Bic lighter 0.4 ounces
Exotac Firesleeve with Bic and lanyard
Scout firesteel
Esbit Fuel Tab
BSA Mini Hot Spark
Sparklite kit
Storm matches. 0.5 ounces
Stofff finalcries
Shelter
Silettei
Emergency poncho
Emergency poncho
Emergency poncho 1.8 ounces Sea-to-Summit Thermolite Reactor sleeping bag liner 13.9 ounces LL Bean Northwoods Cabin Tent Footprint 25.15 ounces
Emergency poncho 1.8 ounces Sea-to-Summit Thermolite Reactor sleeping bag liner 13.9 ounces LL Bean Northwoods Cabin Tent Footprint 25.15 ounces Thermarest Ultralight Pad 25.15 ounces
Emergency poncho 1.8 ounces Sea-to-Summit Thermolite Reactor sleeping bag liner 13.9 ounces LL Bean Northwoods Cabin Tent Footprint 25.15 ounces Thermarest Ultralight Pad 25.15 ounces Titanium Goat bivy sack 7.4 ounces
Emergency poncho
Emergency poncho 1.8 ounces Sea-to-Summit Thermolite Reactor sleeping bag liner 1.3.9 ounces LL Bean Northwoods Cabin Tent Footprint 25.15 ounces Thermarest Ultralight Pad 25.15 ounces Titanium Goat bivy sack 7.4 ounces Kifaru Woobie. 24 ounces Thermarest pad (standard length) 14 ounces Snugpack Stasha Shelter 13 ounces Water Platypus bladder 0.9 ounces Empty heavy-cover titanium canteen 5.75 ounces
Emergency poncho
Emergency poncho 1.8 ounces Sea-to-Summit Thermolite Reactor sleeping bag liner 1.3.9 ounces LL Bean Northwoods Cabin Tent Footprint 25.15 ounces Thermarest Ultralight Pad 25.15 ounces Titanium Goat bivy sack 7.4 ounces Kifaru Woobie 24 ounces Thermarest pad (standard length) 14 ounces Snugpack Stasha Shelter 13 ounces Water Platypus bladder 0.9 ounces Empty heavy-cover titanium canteen 5.75 ounces Deark Trail 16-ounce stainless cup 4.8 ounces
Emergency poncho
Emergency poncho
Emergency poncho

Flora Add
First Aid
AMK ultralight/watertight3.9 ounces
Oversized bandana
Chapstick
Customized trauma/medical kit
COSTOTILIZED TRADITIA/THEDICAL KIT
Cordage
Emergency duct tape
10 feet 550 paracord
25 feet 550 paracord
23 feet 330 paracord
Food
Titanium alcohol/tab stove
Soda can stove
Vargo hexagon wood stove
MSR microlight stove (without fuel can)
Trangia Teflon™ pan5.6 ounces
Long-handled titanium spoon
Standard handle titanium spoon
Light My Fire composite spoon/fork (spork) 0.55 ounces
Starbuck Via coffee packet
Nature's Valley granola bar. 1 ounce
That tole 3 valley granous bull
Illumination
Spare CR123 battery
Exotac four-hour candle
Fenix flashlight
Brinkman headlamp. 2.4 ounces
Empty UCCO candle lantern
Navigation
Brunton compass
Suunto MC-2G compass
Sounto wic-20 compass2.7 ounces
Signaling
Complete signaling kit
Cell phone and case
cell priorie and case

Details and considerations constitute a large portion of time for planning to go ultralight. However, once on the trail, the trip becomes more enjoyable as thoughts are focused more on surroundings than on what is being carried. The ultralight gear carried, used effectively and repeatedly, might become our preference for a standard load-out, thereby reducing what's packed. Under the weight of a standard pack, the mind and body become taxed with time and exhaustion, whereas the body's joints and muscles easily absorb the lower weight and size of ultralight gear.

By reducing weight and size, you quickly learn to lose your dependency on larger, more comfortable, gear and see how your body is capable of enduring. By deliberately handicapping yourself with lighter-weight gear, you fall back on your skills to ensure you handle your resources properly to prevent breakage.

Bigger is not always better in survival training, and insight into your ability can be learned by going lighter.

FOLDING NECK KNIFE CARRY

)) The vast majority of online search results for "neck knives" turn up fixed blades. Neck knife carry is incredibly popular, and many knives are suspended around the neck if they are light enough to be comfortable. Depending on where you are, fixed blades may be illegal to carry leaving only folding knives as your cutlery options. Stout folding knives with lightweight handles, such as the Falkniven U2. make excellent neck knife choices when paired with a solid carrying system.

Robert H. from Survival Sheath Systems and I recently discussed how to carry the U2 folding knife and a Light My Fire micro firesteel in a lightweight kydex carrier. Because the U2 doesn't have a pocket clip, it can easily fall out of a pocket. When sandwiched between kydex, the pivot pin on the handle can be used for

retention. The Light My Fire mini firesteel has separate retention that allows it to remain in the sheath whether or not the knife is drawn.

Without handle fasteners, a full-tang, and traditional belt sheath, the neck knife package he created weighs in at only 2.7 ounces. Compared to my standard belt knife, which weighs 12 ounces, the folding neck knife is a much lighter option for light-duty cutting tasks common while backpacking. This package can be worn 24 hours a day, because the overall profile is minimalist and is forgotten until it is used.

When wearing a neck knife-regardless of the folding system—or a standard fixed blade, always wear it inside your shirt when walking through the woods. Attach it with a loose fisherman's knot or ball chain that will give and/or slide if snagged. Needing to "run through the woods" is an unlikely scenario, but just in case, take steps to mitigate risk.

story of survival

Story by **Bryan Dumas**

The 1984 Union Carbide Disaster in Bhopal, India

Thirty-one years ago, in the late evening and early morning of December 2 and 3, 1984, a silent killer slipped into the homes of thousands of sleeping residents in the slums of Bhopal, India. Shrouded in the night and tempered by the chaos of panic, they were blindly running for their lives—while each breath they gasped brought them closer to death.

As clouds of gas filtered in through the cracks of their shanties, hundreds began to die in the worst industrial disaster in human history. The population of Bhopal is still reeling from that accident 31 years later.



Jobs for All

Union Carbide India Limited (UCIL) opened the Bhopal plant in 1969, and hundreds, then thousands, of hopeful job seekers and their families flooded the area, setting up a number of *bustees*—the Indian word for slums. One of the largest of these was called Jaiprakash Nagar, or J.P. Nagar, and it was also the closest to the factory grounds.

The factory was doomed from the start. Union Carbide, the American parent company (now owned by Dow Chemicals) opened the plant in hopes of tapping into India's vast peasant farming community with the promise of a vast array of pest-control products.

Unfortunately, India's farmers had been dealing with seasons of droughts and floods and never had the means to purchase Union Carbide's chemicals. The chemical plant was a money-losing proposition by the late 1970s; by the early 1980s, it had almost completely stopped producing chemicals.

(above) Overview
of the closed Union
Carbide Factory.
(right) Abandoned
equipment and
broken storage
tanks are seen at
the now-defunct
pesticide factory.



However, that did not mean Union Carbide had removed the toxic chemicals used in the production of its pesticides. Inside the factory, men such as Nadir Khan worked with dozens of chemicals (he never knew the names of many of them) that would be mixed to help create the pesticides Sevin and Temik.

Tanks of Chemicals

One such chemical, stored in three 57,000liter stainless steel tanks half buried on the property, was MIC, or methyl isocyanate—a highly volatile chemical that reacts with water and is incredibly toxic. It is a colorless, lachrymatory (tearing), flammable liquid. At 5 ppm or less, it is odorless to most people, but at higher amounts, it has a sharp smell.

Nadir Khan left the factory after his shift and strolled along the dirt streets of J.P. Nagar in the near-total blackness of the night. He passed bustees made of wooden slats so poorly cobbled together that the dry winter winds and dust would spin through unimpeded. He could never have guessed that behind him a technician was struggling to maintain a growing crisis with one of the plant's MIC tanks.

As the plant's production dwindled, so had the elaborate safety systems that had been established to keep the toxic chemicals in check. Records seem to reflect that plant management assumed that because nothing was being produced, regular maintenance

and safety systems could be disregarded. In all, six separate safety measures to protect Bhopal from MIC were left to rot.

Looming Disaster

Assistant stationmaster Madan Gopal Parashar sat in his cabin a few blocks to the south at the Bhopal train station. He was awaiting the Kushinagar Express that was due to arrive soon. It would be packed with passengers, as usual, on the 33-hour ride between Mumbai and Gorakhpur.

At the Union Carbide plant, a control room operator began to notice that the pressure in tank #610 was rising steadily from a normal 2 psi to 10 psi within an hour. A psi reading of 10 was not, itself, cause for alarm; but it had tripled so quickly. Finally, the psi topped at a

" ... IT WAS TOO LATE. THE TANK GAVE WAY. RELEASING **NEARLY 40** TONS OF **MIC INTO** THE DARK, COLD AIR."

reading of 55, which caused the technicians to run for the tank to ameliorate the situation manually. But it was too late. The tank gave way, releasing nearly 40 tons of MIC into the dark, cold air.

Nadir Khan and his neighbors had just settled into a cold sleep in J.P. Nagar. A strong southern wind blew through the bustee, easily penetrating the shanties and hovels of the thousands of people who called the area home.

Khan's neighbor Jebur Nisha awoke and, as she later told The Toronto Star, wondered "who was cooking chilies in the chula (Hindi for stove) at this hour."

Her eyes began to water, and she quickly realized that something horrible was happen-

ing. A white smoke was being carried south on the winds. Immediately, people began coughing and foaming at the mouth, their eyes burning and their lungs searing.

Nadir Khan stepped outside, looked into the sky, and began velling, "Run! The gas has leaked! Run!"

"At about 12:30 a.m., I woke to the sounds of my baby coughing," recalled survivor Aziza Sultan (as reported to Bhopal.org). "In the half light, I saw that the room was filled with a white cloud. I heard a lot of people shouting ... 'Run, run!' Then, I started coughing, with each breath seeming as if I was breathing in fire. My eyes were burning."

Chemical Cloud Rolls Over the Bustee

At the Bhopal station, the white cloud began to envelop Madan Gopal Parashar's office. In his official deposition in the criminal case against Union Carbide in 2000, he stated, "The first train on my duty was 116 up, Kushinagar Express from Bina side. This train came at 1:35. All the passengers were coughing violently, and I realized something was very wrong. There was one down train, too—a goods train called Khanna special. Another down train, Mathura special, was given 'line clear,' but it stayed at the outer signal until 8 a.m. All other train movements were stopped up and down the line. This was because the cabin staff was not in a condition to work."

Before Parashar, himself, collapsed, he ordered the Kushinagar Express on, and his quick actions probably saved the lives of hundreds. He would wake a few hours later—the bodies of four victims lying on top of him and a toe tag affixed to his foot.

The noxious cloud was becoming thicker and thicker throughout the bustees surrounding the Union Carbide plant, blacking out the

12.15

few faint street lamps that lit the narrow warrens and gullies of pathways between shanties. And into these tight alleys families emerged, blinded, choking on their own vomit, and confused. People began to run—a torrent of human angst and fear so overwhelming that children were torn from their parents' hands and the sick collapsed to the streets, where they were trampled and crushed by the onrushing stampede.

"Those who fell were not picked up by anybody. They just kept falling and were trampled by other people. People climbed and scrambled over each other to save their lives. Even cows were running and trying to save their lives and crushing people as they ran," one survivor later recalled.

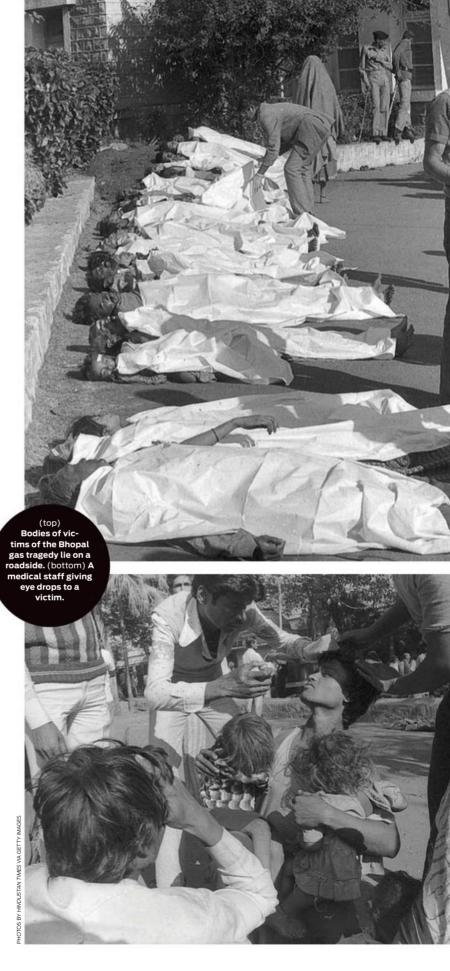
Surviving the Gas Cloud

There were some who did not get caught up in the apocalyptic maelstrom. Azaad Miyan, a Union Carbide worker, woke to the same burning sensations as everyone else. Stepping out of his hut, he could feel the wind blowing against his body, and he quickly realized that his best bet for survival was to run into the wind, not with it. Miyan put a wet cloth against his face—something he had learned at the plant—and took off running north, calling to his neighbors Inyat and Bano Khan to join him. Bano started running with Miyan, but her husband, Inyat, grabbed their two children and began running the other way. Miyan spent days after the disaster looking for Inyat. When he finally found him, he said that Invat's body was so hard, "like wood."

Those who ran with the wind with the toxic smoke surrounding them quickly succumbed to the poison's effects. Most were reduced to absolute blindness, and with each gasping breath, they seared their lungs and poisoned their nervous systems. They lost control of all bodily functions; people started urinating and defecating as they ran. Their vomit was so heavy that most choked to death where they stood or fell. Pregnant women had spontaneous, bloody abortions as they frantically raced down the streets.

Death Toll Mounts

Estimates from Union Carbide officials early on December 3rd placed the immediate death toll at more than 3,500. Yet, sanitation and other municipal workers claimed to have collected more than 15,000 bodies. And taking into account the number of death



"THE POPULATION OF BHOPAL IS STILL REELING FROM THAT ACCIDENT 31 YEARS LATER."

shrouds sold by the end of the week, 8,000 people had died.

What is known is that a half-million people were exposed to the toxic MIC cloud as it swept through the many slum colonies surrounding the plant.

While the cause and blame for the leak are still being fought in the courts, a number of factors can be attributed to the high mortality rates. First, the Union Carbide plant had no established safety procedures to deal with a leak on this scale, nor were any evacuation plans created for the multiple bustees that surrounded the plant.

People were left to their own devices, and, in the chaos, they often chose poorly. Police officers instructed people to run, which probably exacerbated the problem: By running, the people took in breath after deep breath of the toxins, effectively sealing their fates. Both the police and residents of J.P. Nagar and the other slum colonies were unaware that the simple act of lying on the floor and covering their faces with a wet towel or shirt would have dramatically increased their survival odds.

What Had Happened?

The bustees, themselves, comprised another factor. They were densely packed—nearly 20 percent of Bhopal's residents lived in the 156 slum colonies—and they lacked the most basic necessities (including phone service and water). Consequently, the infrastructure could not handle the swarm of frightened and sick people running for their lives. Narrow streets, poor transportation, and an overwhelmed medical system ultimately doomed many people.

The survivors faced years of debilitating injuries, including respiratory diseases, cancer, and what one doctor called "monstrous births." Women's menstrual cycles were radically altered, and children were born with birth defects and severe learning disabilities.

Those who escaped with their lives "were the unlucky ones," lamented Rashida Bi. "The lucky ones are those who died on that night." ASE

LIVING BESIDE

MANY PEOPLE HAVE WONDERED IF ANOTHER BHOPAL DISASTER COULD HAPPEN AGAIN, AND, TIME AFTER TIME, HISTORY RESPONDS, YES-ALTHOUGH NOT TO THE SCALE OF DEVASTATION SEEN DURING THE EARLY MORNING OF DECEMBER 3, 1984.

In September 2001, an explosion at the AZF fertilizer factory in Toulouse, France, killed 29 people and injured 2,500. An explosion at the West Fertilizer Company in West, Texas, in April 2013 killed 14 and injured 160. And, most recently (August 2015), in Tianjin, China, two explosions rocked a container storage station at the port. Estimates put the death toll at 159, with 14 missing.

In the United States, one in three Americans lives close enough to a chemical facility to be in danger of a toxic leak. The biggest culprit for Americans is chlorine, which is widely used by local municipalities in their water treatment facilities. This is the same chemical that was widely utilized in the trenches of France and Germany during World War I and again during the Gulf War.

A Greenpeace study found that in all, there are 473 chemical facilities, each of which puts more than 100,000 people in danger. Of those, 89 facilities threaten the lives of more than 1 million. Of the 12.000 facilities that work with one of the 140 chemicals monitored by the Environmental Protection Agency, 2,500 acknowledge that in a worst-case disaster scenario, their facilities would endanger the lives of 10,000 to 1 million people; 4,400 facilities identified their worst-case scenarios as endangering between 1,000 and 9,999 lives.

One thing to note is that the West Fertilizer Company was not on any watch list; neither the EPA nor the Department of Homeland Security (DHS) via its Chemical Facility Anti-Terrorism Standards program, established post 9/11, includes ammonium nitrate as one of their 140 dangerous chemicals. Additionally, DHS received no information, because reporting by chemical companies is largely voluntary—despite the fact that the West facility was storing 540,000 pounds of ammonium nitrate (1,350 times the amount needed to trigger a report to DHS).

You can find out if your own community is near a chemical facility via these two interactive websites:

- → www.usactions.greenpeace.org/chemicals/map
- → www.foreffectivegov.org/maps

They show the proximity of schools to chemical facilities or facilities that produce or house toxic or explosive chemicals nationwide.

The best way to mitigate the "monster" living next door is to have an understanding of the threat in your community, know the evacuation procedures and routes, and do what you can beforehand to ease the anxieties that are sure to rise during an emergency.

Gear Guide.12.15

'Big' Things, Small Packages

12 Life-Saving Devices for as Little as \$5

Story by **Kyle Larson** Photography by Henry Z. De Kuyper

BIGGER ISN'T ALWAYS BETTER.

A 17-inch machete cuts well in the jungles of South America, but it doesn't fit too easily in your pocket and will look quite conspicuous hanging off of your belt while you're at the food court in the mall.

The alternative?
Opt for the same kind of tool—only smaller.

Sure, you're not going to find a machete in this article that will fit on your key ring or tuck discretely into your jacket pocket, but most times, a survival situation doesn't call for a machete; instead, just a small knife to cut off some twine or to open a package of K-rations will do.

Included here, as well, are some other useful and/or life-saving items that are also compact but effective.



Spyderco Dog Tag Folder

The Dog Tag Folder's single-sided handle is fabricated from solid titanium and accurately replicates the size and shape of a military dog tag. The center of the handle scale is machined to create an integral spring bar that houses a steel ball bearing for the blade's detent mechanism. The Dog Tag's blade is a sheep foot-style blade made from premium CPM S30V stainless steel with a stonewashed finish. To protect the edge when closed, the blade is chisel ground with a single flat bevel on the front side.

Specifications

- · overall length: 3.23 inches
- · blade length: 1.23 inches
- blade steel: CPM S30V
- · closed length: 2 inches
- · weight: 0.9 ounces
- · blade thickness: 0.118 inches
- handle material: Carbon fiber/G-10 laminate

\$84.95 Spyderco.com

Real Avid Gun Microtool

Real Avid produces three tools for three different applications: the ubiquitous 1911, the versatile AR15. and the imposing Shotgun. Each tool is made from stainless steel and comes with a key ring and strap. All three tools are equipped with a bottle opener, cutter, ruler, and carabiner, while the shotgun tool has 4mm, 5mm, ¼-inch and 3%-inch wrenches, a scope, windage/elevation adjuster, and a universal choke wrench that fits most shotgun gauges. The 1911 tool has a barrel bushing wrench, spring plug stopper, and a flathead screwdriver. The AR15 tool comes with boat-tail, bolt face. and firing pin scrapers, a 5mm bit driver. -, 5/16-, 1/4-, 3/16-, and 1/8-inch wrenches, and a front sight adjuster.

Specifications

- · all stainless steel construction
- · kev ring with strap
- · rotating pin punch
- · bottle opener
- cutter
- 1-inch ruler
- carabiner

1911: \$9.99; AR15: \$19.99; Shotgun: \$9.99 Realavid.com



CCRKT Eat'N Tool

Available in six colors, the Eat'N tool does a lot more than shovel food into your mouth. Besides a spoon and a short-tined fork, it has a bottle opener, screwdriver and three metric wrenches (10. 8. and 6mm).

Specifications

- · dimensions: 4 inches
- weight: 1.5 ounces
- · material: 3CR13 steel
- · features: spoon, fork, bottle opener, screwdriver, wrench set

\$7,99 Crkt.com



Gerber Artifact

The Gerber Artifact eight-function multitool can be carried in a pocket or on a key chain. At only 1.5 ounces, it is light enough not to be a burden. It offers an array of tools that give you the ability to strip a wire, pry out nails, cut open a box, screw, bolt, slice, and even open a bottle. Made from stainless steel coated in titanium nitride for durability, The Gerber Artifact comes with three replacement blades.

Specifications

- · length (open): 4.8 inches
- · weight: 1.5 ounces
- · features: EAB #11 hobby blade, cross driver. small flat driver, medium flat driver, bottle opener, wire stripper, pry bar, lanyard

\$14 Gerbergear.com

Nite Ize DoohicKev Multitool

Made of durable stainless steel, the Nite Ize DoohicKev Multitool features a halfdozen tools that do everything from tighten bolts and screws to open a bottle. Opposite a clip is an etched ruler for on-the-spot measurements, and the carabiner opening is shaped to function as a wrench. On the other end, the DoohicKey features a bottle opener, flat head screwdriver, and box cutter.

Specifications

- · dimensions: 2.6x0.7x0.1 inches
- weight: 0.4 ounce
- features: box cutter, bottle opener, wrench (1/4, 5/16, and 3/8 inch), ruler (inches and cm), flat-head screwdriver



Swiss+Tech Micro Max 19-in-1

The stainless steel Micro Max 19-in-1 multitool folds into 19 different professional-grade tools. Tighten, loosen, wire, drill, file, open, and measure with ease. This multitool includes two hex wrenches, six screwdrivers, pliers, wire cutter, wire stripper, wire crimper, hand drill, file, bottle opener, two rulers (mm and inches), and two ruler extensions.

Specifications

- · dimensions: 1 x 15/16 x 1/4 inches
- · weight: 3.2 ounces

\$14.99

Swisstechtools.com



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Patchworks Masterkey

Made of quality steal, the 1/4-inch-thick body can take some abuse. It features four hex wrenches (from 1/4 inch to 7/16 inches), has a 45-degree chiseled edge, bottle opener, and screwdriver bit holder with a doubled-ended screwdriver bit fitted perfectly into a handwrapped 550 paracord lanyard. It's nearly 4 inches in length and just slightly more than 1.5 inches wide.

Specifications

- · dimensions: 4x1.5x1/4 inches
- · 4 hex wrenches
- 45-degree chiseled edge
- bottle opener
- screwdriver
- paracord handle

Starting at \$40 Masterkey.pw

Griffin Pocket Tool

This key chain utilizes a minimum of 11 tools that are most useful on a day-today basis, such as 5.16-inch hex, bit driver, bottle opener, flathead screw driver, scoring tool, 4mm to 7mm hex tools, and a pry tool.

Specifications

- · overall length: 3 inches
- thickness: 3/16 inches
- · width: 0.6 inches
- · weight: 0.8 ounces

Coyotemtnoutdoors.com



KEY-BAR

The KEY-BAR is a simple solution to noisy and unorganized keys. It works like a pocketknife for your keys. Just organize and assemble your keys as you prefer and attach the included, specially designed titanium pocket clip. The KEY-BAR is made of high-quality materials, including aluminum, titanium, and carbon fiber and is available in a variety of colors and patterns. Also available are specially designed accessories such as a flash drive, bottle opener, carabiner, and comb. A KEY-BAR will stop the noise, kill the clutter, and consolidate your keys.

• 1 KEY-BAR with removable titanium pocket clip in your choice of color

· 21/2-inch screws (1-4 keys)

- · 2¾-inch screws (1-8 keys)
- · 2 -inch screws (1-12 keys)
- · 15 washers
- · 2 "O" rings (allow you to adjust the tension)
- · 1 key fob link

Starts at \$45 Keybar.us



Small Tools



KLAX Lumberjack

The Klecker Ax System (KLAX) takes the original concepts of primitive stone tools and adds a modern twist. Available in three models, the KLAX redefines the simple tomahawk with an easier and more secure way to attach the ax head. Additionally, the KLAX adds versatility via several built-in multitool features. The KLAX clamping system utilizes a pair of nested clamps that pivot out from the ax head to attach an optional ax handle or a handle made from a branch in the field.

Specifications

- · material: SUS420J2
- · dimensions: 6.5x3.7x0.5 inches
- · weight: 14.4 ounces
- · material: ballistic nylon sheath

\$160

Kleckerknives.com

Survco Credit Card Tool

The Survoo Tactical Credit Card multitool has more than 20 functions; most notable is its ability to be mounted on a handle and used as a tactical axe. By using a handful of zipties, rope, or wires, and a wooden handle, you can firmly attach this tool in order to make an axe, spear, or arrow. It can be used as a knife, scraper, skinner, shovel, saw (thanks to its serrated edge), seatbelt cutter, bottle opener, water valve wrench, gas valve wrench, nail puller. ¼-inch socket. ¾-inch socket. ¼6-inch wrench, and flathead screwdriver.

Specifications

- · made in the USA
- 21 functions
- · credit card size
- · fits in your wallet
- won't corrupt your other cards
- · material: 304, 12-gauge stainless steel

\$29.99



SOG Key Knife

What do you always have with you? Right: your keys. And the best place to keep a small knife exactly where you need it at all times? On your key chain. Made from 420 steel, SOG's folding-blade key knife is in the exact shape and size as a standard house key. Not only is it covert, it is also convenient.

Specifications

- · overall length: 4.0 inches
- · blade length: 0.5 inch
- · weight: 0.7 ounce
- · blade shape: drop point
- · edge: straight
- · steel: 420J2
- · hardness: 52-54

\$12.95

Sogknives.com



backcountry.12.15

Trustworthy to the End

SPYDERCO'S FOLDERS STAND UP TO UNINTENDED USE

Story and Photography by **Garrett Lucas**

F YOU ASK ANYONE INVOLVED IN THE FIELDS OF PREPAREDNESS OR BUSHCRAFT, THEY WILL INVARIABLY TELL YOU THAT A KNIFE IS THE MOST IMPORTANT TOOL TO HAVE ON HAND. IN ALL HONESTY, THIS PROBABLY APPLIES IN DAILY LIFE, AS WELL. WE ALL USE KNIVES IN MEAL PREPARATION, AND A LARGE PERCENTAGE OF PEOPLE WHO WORK OUTSIDE OF AN OFFICE ENVIRONMENT ALSO USE KNIVES OF ONE SORT OR ANOTHER ON A REGULAR BASIS.

It goes without saying that if an emergency or disaster scenario occurs where the general public doesn't have access to modern amenities and electronic appliances, knives will, once again, be the first tool we turn to for most of our daily chores. This will be particularly true of pocket knives, since they are the easiest to carry and have on hand at all times.

One of the most prolific manufacturers of pocket knives is Spyderco, which offers a wide range of knife styles and utilizes a broad gamut of material types, depending on the intended use. Just about anything you can think of is probably in its catalog—from lightweight folding knives to heavyweight utility and fighting folders to fixed blades for just about every occasion.

Having used Spyderco's knives for over two decades, I've come to trust in their reliability and performance, and that's why we're presenting a few of the company's new models for our readers' consideration—in case there's a time when things get tough, and a life may depend on the tools you have on hand.

LIVING A SPYDERCO LIFE

Because of the variety of models Spyderco offers, we decided to do our story with a slightly different approach: Instead of doing a review on just one knife, we decided to talk about three different Spyderco models I've carried and used the past few weeks—the Foundry, Burch Chubby, and Roadie. Some got used more than others, but that's mainly due to their specific designs. Nevertheless, we did our best to test the knives via the tasks for which they were designed, and, in some cases, we went beyond that standard.

A NATURAL PARTNERSHIP—THE FOUNDRY

The first model to be discussed is also the one I probably used the most. The Foundry stayed with me just about the entire review period. It was my EDC knife for about a month and was used constantly for common, everyday tasks. It also traveled with me into the field on several occasions while shooting or just passing time in the hills.

The Foundry was a collaborative effort between Spydero and Carpenter Technology Corporation (a U.S. steel manufacturer). Made in Sypderco's Golden, Colorado, factory, the Foundry utilizes several Carpenter alloys in its construction. The handles are made of Custom 465 stainless steel, the back spacer



from BioDur 316LS, and the blade is formed from CTS XHP. According to Carpenter's website (www.cartech.com), CTS XHP has the corrosion resistance of 440C and approaches the maximum hardness of D2. CTS XHP can actually be hardened to a 64 HRC.

Handling the Foundry is a pleasant experience, and all the details are just the way I like them. The broad blade is 3.31 inches long and .12 inch thick, and the entire knife weighs 5.3 ounces. It opens smoothly, with no resistance, but the fit is still tight and solid. This is a wellbuilt knife, utilizing the Reeve Integral Lock, and the edges of the handle scales are rounded off to improve comfort. Finally, it is configured for tip-up carry, but unfortunately, it is not reversible for lefties.

Spyderco calls the blade a "clippoint" style. It certainly has the
usual taper, with the blade getting
thinner toward the point, but
there's no removal of the top
side of the blade that would be
typical of a clip-point. It is a flat
grind from edge to spine. While I
like clip-point blades, the Foundry
works better without that feature,
because the point retains its strength
for chores that might be considered outside its
realm of intended performance. This is the very
definition of what we would expect in a survival
tool, right?

SHORT AND STOUT—THE BURCH CHUBBY

I have to say that I was immediately surprised the first time I picked up the Burch Chubby. At first glance, this knife seems small, although still attractive. However, once you feel the weight of it, there's no doubt you've got a robust tool to work with. With an overall length of just 5.96 inches, the blade is only 2.3 inches long. Its weight comes from the thickness of the CPM S30V blade—almost .18 inch. The handle scales are made of titanium, and one side is adorned with three carbon fiber inserts. It's such an elegant knife that you hate to actually use it.

The Spyderco Burch Chubby is based on a popular design by custom maker Michael Burch. What really makes it stand out is the length of the cutting edge you get from the oversized belly of the blade. With a deep hollow grind and an aggressive reverse taper along the

spine, this blade design is good for both slicing and penetration (think: self-defense). The Chubby incorporates a Reeve Integral Lock and has a butter-smooth opening with an extremely solid lockup.

The Foundry is configured for tip-up, right-handed carry and rides securely in the pocket.

TIME FOR SOME TESTS

Aside from the day-in, day-out chores I did with the knives as I carried them, I took them into the woods a few times to try them out on jobs they really weren't intended to do. There's an axiom that states, "The best knife you have is the one you have with you," and although it's a little trite, there's a ring of truth to it. We don't know when an emergency situation will arise, but we can't always go strapped with an 11-inch chopper and a dedicated bushcraft knife. (Imagine what folks would think of you at the office.)

The compromise we have to make, in most cases, is to carry a folding knife, because there could be a time when all you'll have with

you is a folder, and you need to make sure it's up to the job. This is why I used both the Foundry and the Burch Chubby on a few simple tests to see how they would fare. The Foundry got the most use because of its size, even though both knives are robustly built.

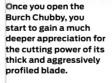
The first test was to see how well the Foundry would do making a pile of tinder/kindling shavings from a dead branch. It took just three to four minutes to get a decent-sized pile. These shavings usually won't take a spark as easily as dried moss, tinder tabs, or cotton balls, unless you're using magnesium or a Misch metal rod. However, they do come in

handy to help build the fire quickly and sustain it long enough to get other

kindling in the mix to

really get the fire going.
The next experiment was to carve several stakes to see how comfortable the Foundry was for more repetitive work and to see if my hand would experience any fatigue during the process. Stakes can be used for anchoring snares, tarps, or tents and even as improvised weapons, such as a "knife"; and, if you think about it, a long stake is a "spear."

I'll be honest: I was surprised how well the Foundry did with this test. I used dead wood, which is a little tougher to carve and shape than green wood, but that didn't seem to



The double detent on the blade head makes it much easier to open the Roadie, rather than finding a catch for a fingernail. The review samples we received were blue and red, but other colors are available.



matter to the Foundry. In a matter of about 10 minutes, I had four stakes done. I could have been finished a bit earlier (I probably worked a little longer than I needed to for simple stakes).

It was time for the Burch Chubby to come out and play, so I did some similar tests, even though the knife has only a 2.3-inch blade. I've got a friend up north who has a thing for fuzz sticks, so I did that test for him. Because of the oversized belly of the blade, it took a bit of time to get the technique down. I found that using the front near the point did a better job grabbing the wood and making shallow cuts. Once that was figured out, it was a fairly easy process.

Because of its short handle, the Chubby wasn't as easy to control as the Foundry, but it made up for it with a lack of jimping. It was far more comfortable to apply pressure to the spine hump without any jimping digging into my thumb.

I carved yet another stake with the Chubby, and this one was almost twice as thick as the others done by the Foundry. Even so, I was able to turn it out almost as quickly, despite the Chubby's size. Granted, neither the Foundry nor the Chubby is as comfortable as a dedicated bushcraft knife, but that's not what Spyderco had in mind when these models were designed. What both knives do offer is an always-available option to perform these kinds of chores because of their edge geometry, solid construction, and the quality of the materials used.

IT'S THE TSA'S LOSS—THE ROADIE

Although recent reports show that close to 95 percent of mock explosives and banned weapons made it through TSA screening, rest assured that this federal agency has every pair of fingernail clippers that's ever gotten within 100 feet of an airport.

I do mention this for a reason: At one point, the TSA was contemplating allowing citizens carrying pocket knives to once again board planes. It issued a set of specifications that knives needed to meet but soon decided against allowing any kind of knife.

The Roadie was Spyderco's response to the TSA specifications. It's a very small, notchedjoint folder with a sheep's foot blade. It has a 2.09-inch blade made from N690Co, and the handle is made of fiberglass-reinforced nylon. The handle comes in different colors, including black, blue, red, orange, and gray.

Despite the Roadie's tiny size, the more I used it, the more I liked it. One particular thing I liked was the double detent divots at the head of the

Foundry

Specifications

Blade length: 3.31 inches Overall length: 7.55 inches Blade thickness: .12 inch Grind: full flat Blade steel: CTS XHP Handle material: stainless steel Weight: 5.3 ounces

Burch Chubby Specifications

Blade length: 2.3 inches Overall length: 5.96 inches Blade thickness: .18 inch Grind: hollow grind Blade steel: CPM S30V Handle material: titanium Weight: 5.3 ounces

Roadie

Specifications

Blade length: 2.09 inches Overall length: 5.08 inches Blade thickness: .11 inch Grind: flat grind Blade steel: N6906Co Handle material: FRN Weight: 1 ounce

blade that make opening the Roadie much easier than typical slip-joints with the fingernail catches. And, after having a couple of the review samples around for a little while. I was hit with a couple of ideas.

I've been in preparedness mode for about 20 years, and I've put together a lot of different styles of kits—such as kits made from Altoids tins (I have at least one of these on me at all times). These little kits don't seem like much, but they're better than nothing at all.

For a kit that small. I used to resort to putting in a couple of scalpel blades for cutting materials, but I figured out that the Roadie is a perfect size for such a kit and still leaves plenty of room for other useful items. That was my first "brilliant" idea.

The second was to attach the Roadie to my keychain via the lanyard hole so I always have a knife with me, no matter where I go and even when I forget to take another knife along. Now, I'm not advising anyone to do this. I've just been trying it out for the past week to see whether the blade is prone to come open on its own while the keys are in my pocket. (So far, it hasn't happened, but I'm still being careful until I'm comfortable with the arrangement.) You need to keep in mind that certain spots, such as schools and sometimes your own workplace, might have an issue with a knife on your kevring, so user discretion is advised.

Let's face it, the Roadie or any folding knife of its size isn't going to double as a pry bar or be relied on to tear through thick, dense material. The Roadie is made to cut through normal materials such cordage, packaging, or first aid materials, and it does those chores just fine. I keep scalpel blades in all my pocket kits, and the edge on the Roadie seems to be just as sharp. However, you get the bonus of having a handle already in place.

THE FINAL WORD

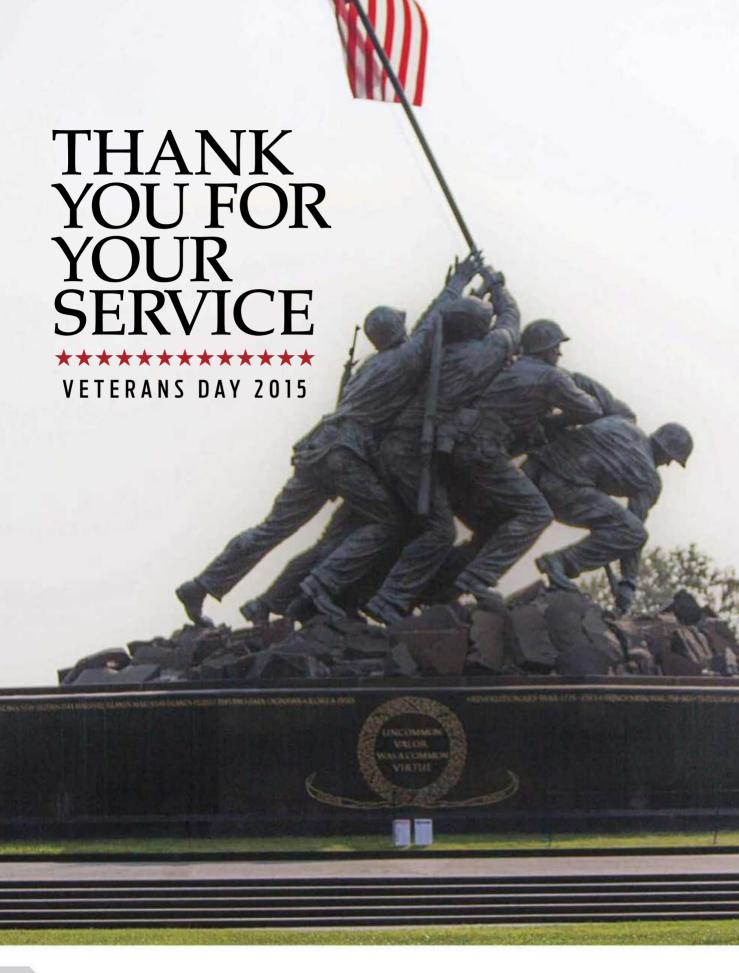
These three folders represent just a small sampling of the variety of knives Spyderco currently offers. It's always better to do your homework and pick the right tool for the job. But whenever an emergency comes about, you have to use what you have on hand. We can't always be equipped to the gills wherever we go, so even if you're forced to make a compromise regarding what you'll use in a time of crisis, you can still have a quality tool on hand.

If you're looking for a dedicated knife for a specific job, or if you want a quality, all-around knife, Spyderco will most likely have whatever you need.



Contact Information

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A T-45C Goshawk training aircraft attached to Training Air Wing (CTW) I taxies across the flight deck of the aircraft carrier USS Dwight D. Eisenhower.

U.S. AIR FORCEA color guard detail stands

in front of a C-5M Super Galaxy in preparation for a retirement ceremony at Travis Air Force Base, California.

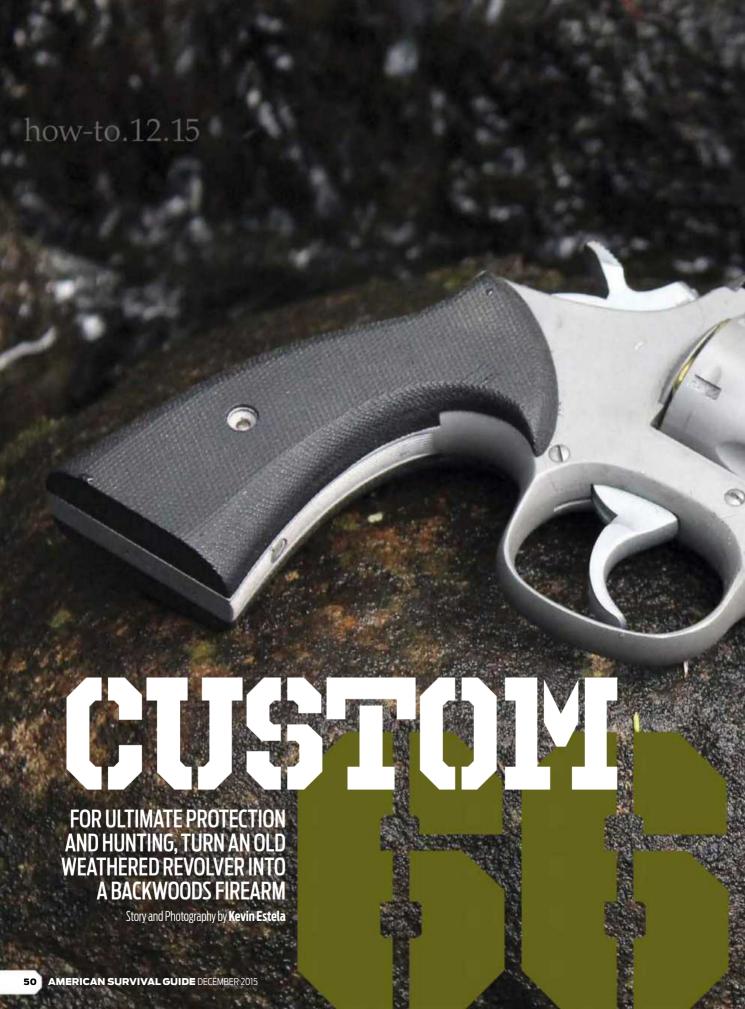
A U.S. Army Reserve soldier reads some of the 58,272 names etched into "The Wall" of the Vietnam Veterans Memorial in Washington, D.C., as the sun rises, July 22, 2015.

A Marine Corps color guard posts the National and Marine Corps colors during the Remembrance Ceremony for Company "H," 2nd Battalion, 26th Marines, held at the Marine Corps War Memorial at Arlington, Virginia.

U.S. COAST GUARD The Coast Guard cutter

Hamilton, a 418-foot Legend class cutter, arrives in Miami.

SERGEANT JUSTIN M. BOLING





12.15







(top) Stainless steel is not rust resistant, but it is the perfect choice for carry in wet environments. (middle) The author's revolver is equipped with black Micarta grips made by Greg Haugh of LoneRider Custom Grips. (left) The Combat 66 is loaded with heavy .357 rounds for deep penetration through thick hide. (opposite) All shooters found the Custom Combat 66 comfortable to shoot.

TRIGGER JOB

The big joke of double-action/single-action revolvers is "double the pull and double the difficulty." This comes from the heavier and longer trigger pull of double-action revolvers such as the Model 66. Reducing the trigger pull weight and smoothing the action help improve accuracy. Regardless of whether it's a miniscule or major improvement, any improvement increases your chance of hitting your target. Consequently, I suggest a good trigger job prior to investing in fancy finishes or expensive grips.

I'm not a gunsmith, so I enlisted the help of my friends at JoJo's Gunworks. John and Jody are well known in the New England area and do a lot of work for various law enforcement agencies. I wasn't going to mess with the trigger myself when they do such solid work. And when they were finished, the DA trigger pull was lowered to 8 pounds and the SA pull to 4 pounds.

NOVAK EXTREME DUTY SITES

The stock sights on the Model 66 comprise an adjustable blade and a standard front post. While these sites are fine for most shooters, I wanted to remove any additional parts that could fail. I chose the Novak Extreme Duty Sites for their simplicity. The front post has a tritium insert, and the rear site features solid construction with no adjustment.

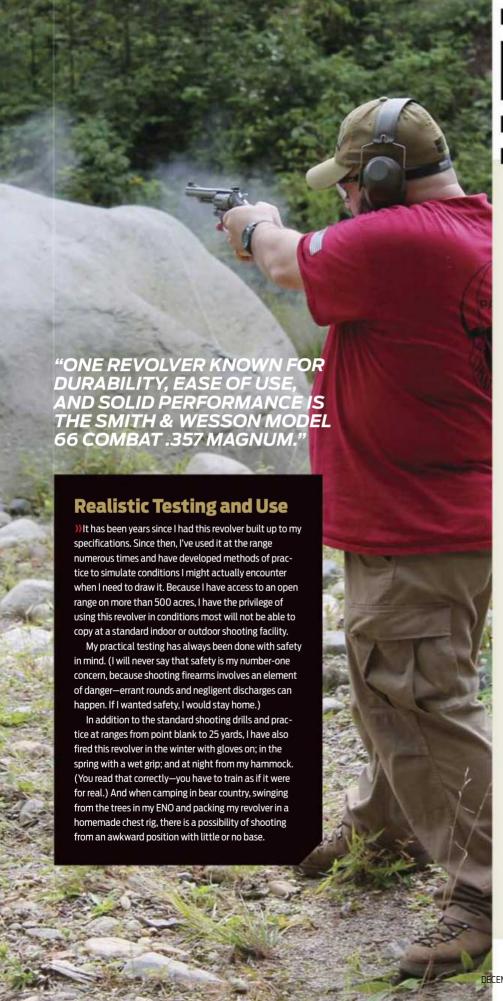
This choice of sites was not without a tradeoff: While I lost the adjustment of the rear notch, I gained the durability of no moving parts. In defense of the fixed rear site, enough time spent shooting this revolver has shown me it is more accurate when bench-rested than shooting it off hand. Any inaccuracy is attributed more to user error than the sites being out of line with the bore.

BEAD-BLASTED 'BATTLESHIP GRAY' FINISH

Stainless is my choice for woods guns; however, I like blackened stainless whenever possible to eliminate glare. Unfortunately, some firearms finishes are expensive to apply.

When I purchased my Model 66, it was in pretty rough shape. There were many surface scratches and signs of obvious wear. I wanted a new finish, but I didn't want to break the bank. With this in mind, my gunsmiths recommended a bead-blasted, battleship gray stainless. The firearm retained its stainless composition, but it lost the shine I dislike.

After years of carry, the less-polished finish has held up to the elements and has not taken





Chestpack Carry

)) One of the most convenient and comfortable methods of carrying a firearm into the backcountry is a chestpack holster. Worn in conjunction with a large-volume backpack, a chestpack (such as the Koala and Koala Lite from Kifaru) moves the firearm from the waist to the center of the torso for unrestricted access. With a single pull of a tab with one hand, the panel of the chestpack is peeled from the main body, where the pistol or revolver is carried, and it is drawn with the other. Reloads, a high-intensity handheld flashlight, or essential cleaning supplies can be carried in the central pouch, as well, rounding out the carry package.

A chestpack works well while hammock camping. Since most hammocks prevent any sleeping positions except on one's back, a chestpack will always be positioned where it won't slip under a sleeping pad or where it can't be accessed. An outdoorsman need not unholster and, depending on how the firearm is carried, two deliberate steps (draw and chamber) can separate him from having his firearm ready in an altered state of consciousness and sleep.

A chestpack is also handy while driving or in seated positions for extended periods of time. It flies under the radar in public places where conventional belt carry is not practical. Paired with a camera or fishing pole, a chestpack blends into the gear carried and does not appear to be a pouch containing a firearm. When not worn with crisscrossed straps around the back, both straps can be doubled over to make the chestpack into a shoulder bag.

Just as with any specialized carry system. one must practice holstering and unholstering with a chestpack and an unloaded firearm. However, once trained and practiced, accessing a firearm contained within becomes easy.

Next time you reach for your pack to take a walk through the woods, pair it with a concealed-carry chestpack and ensure your defensive handgun is close at hand.

SOURCES: WWW.KIFARU.NET: WWW.HILLPEOPLEGEAR.NET



(above) The author believes in authentic training. Here, he demonstrates strong hand shooting from a common sleeping position. (inset) Seen here is a typical grouping with the revolver fired off hand. This grouping was done prior to front sight adjustment and pinning. All shooters, even lefties, threw rounds to the left.

on any rust. Also, the finish is relatively durable and hasn't worn out. It is also easy to refinish without any chemical process. In fact, it can even be done on your own with a simple beadblasting cabinet.

CUSTOMIZED BLACK MICARTA GRIPS

The stock grips of the Model 66 feature a square butt and are made of wood. While wooden grips certainly have a classic feel and look great, they are less durable than the rubber grips now found on most of the Smith & Wesson lineup.

Rubber seemed the obvious choice, but I had reservations about using it. I've had rubber and plastic products dissolve when insect repellent comes in contact with them; in addition, I have found that rubber grips tend to grip clothes when drawing a firearm from concealment.

The problem I needed to address was which grip provided the durability of rubber without the problems associated with it. Luckily, one of

"">"Revolver reloading with speed strip is a lost art. Perhaps this is attributable to the growing popularity of autoloading "bottom-feeding" pistols, the widespread use of speed loaders or just lack of practice.

Whatever the case may be, the speed strip is a viable way of carrying various loads for your revolver in a convenient package that lays flat for carry and is ideal for the spaceconscious outdoorsman.

Speed strips were designed to help police officers and those who carry revolvers for self-defense manage their ammunition. Rather than loose rounds in a pouch or pocket, the speed strip holds the ammunition by the rim on the case and allows the user to load two rounds at once. The speed loader can be very effective in scenarios in which the user "shoots two, reloads two" while behind cover. For the outdoorsman who concerns himself with dealing with threats other than law enforcement (i.e., dangerous game, snakes, etc.), a speed strip can be loaded with different rounds for different scenarios.

carried 2x2x2. If a new scenario presents itself, the standard carry rounds may not be suitable, and loading a specialized round from the speed strip is the best option. Rather than using—or "wasting," as some would call it ammunition meant for one application on any application, the right tool is used for the job. Instead of carrying a separate derringer loaded with snake shot (because it might not be affordable or practical) or alternating rounds in a chamber (a practice I advise against), the required snake shot load can be swapped in, if necessary, in a relatively short amount of time.

Speed strips are inexpensive and durable for repeated use. A package of Bianchi speed strips will cost less than most spare magazines for autoloading pistols. All that is left is to practice loading and unloading with dummy rounds or snap caps.

Next time you strap your revolver to your side, tuck a specialized speed strip in your pocket to make yourself ready for just about anything you encounter.



Gear Guide.12.15

When Emergency Calls

TRAUMA KITS FOR WHEN SURVIVAL GETS MESSY

Story by **Frank Warren Webber** Photography by Henry Z. De Kuyper

SURVIVAL CAN BE MESSY.

One moment, life is going smoothly, and the next, you're whirling in a maelstrom of menacing peril, fighting for your life or the lives of your loved ones.

Rarely does a major disaster or accident leave things neatly on one side of the spectrum or the other: Never does everyone survive without a scratch, and most times, there will be a varied range of injuries. Only a small percentage of those will require just a band aid or body bag. The vast majority will fall in the middle, where serious wounds and lifethreatening injuries might make up the greatest number of victims.

This is a situation outside the wheelhouse of a simple first aid kit and, if transportation to a medical facility is out of the realm of possibility, the victims will have to be treated somehow.

The best gear to have in an emergency situation is a full-blown trauma kit. Some of these only handle a small list of the most common circumstances, while others are more inclusive.

The following are five examples of trauma and advanced first aid kids able to treat severe wounds. They span the gamut of cost and size. Consider where you will be keeping this kit, how it will be transported, and where you might need it before adding one to your survival cache of gear.



Prepare 1.0 FAK

Inside the Vanquest FATPack (first aid trauma pack)—a full-sized medical pack that offers volume-maximizing storage and instant accessibility—is stored Prepare-1's traumabased medical kit. Elastic loops over high-visibility ripstop pockets are found in the main compartment's center and side flaps, along with a user-configurable shock cord storage ladder on the front flap. Essential items can be secured and easily seen against the high-visibility interior, saving you precious time.

Just one downward pull on the main straps deploys the Prepare-1 kit. Inside, there are four pockets with elastic webbing slots. The MOLLE webbing on the side and the rear make the kit modular, able to be attached anywhere, and completely secure.

CONTENTS

Personal Protection

- · 1 emergency/survival blanket
- · 2 nitrile gloves, large, black
- · 3 personal antimicrobial wipes

Immobilization

•1 elastic bandage wrap, 2 inches x 4.5 yards

Instruments

- ·1 tweezers
- · 1 flat duct tape, 1.89 inches x 2 yards
- •1 EMT scissors

Wound/Burn/Blister

- ·1 trauma pad, 5x9 inches
- · 3 Burn Jel®, 3.5 grams
- · 30 band-aids, 6 knuckle, 6 moleskin
- 1 stretch gauze, 3 inches x 12 yards
- 1 Suture Strip® Plus, 0.25x4 inches
- · 2 non-adherent dressings, 3x 4inches
- · 3 povidone-iodine prep pads
- · 4 sterile gauze pads, 3x3 inches

Medication

- · 2 aspirin, 2/pack (analgesic)
- · 2 Diamode, 1/pack (anti-diarrheal)
- · 2 Diphen, 1/pack (antihistamine)
- 2 ibuprofen, 2/pack (anti-inflammatory)
- · 3 hydrocortisone 1% cream, 1.5 grams
- · 3 triple antibiotic ointment, 0.9 gram
- · 1 oral rehydration salts, 12.5 grams



Wilderness Medical **Systems Tsavo**

The Wilderness Medical Systems Tsavo is a "go anywhere, do anything" kit, perfect for a small trek into the wilderness, a tough spot in the city, or any emergency that catches you off guard. Well supplied for use as a family home emergency kit, Tsavo is well organized into clear modules and housed in a robust, virtually indestructible outer bag. Tsavo helps you handle the kinds of basic medical emergencies that tend to crop up.

This kit provides a comprehensive selection of supplies for between one and eight people to cover first aid needs and much more if the situation gets worse. Although the Tsavo is best left in base camp and a small selection of items stowed in a daypack for short outings, it is well suited in the wilderness for treks lasting up to 14 days.

The Tsavo is easy to use. That means you can respond immediately when something happens, thereby reducing panic and saving time.

FEATURES

- · total items: 215
- · professional-grade supplies
- · clear, heavy-duty ziptop modules by function
- · content cards in each module
- · high-visibility labels
- · refillable
- · rugged, expertly designed bag

CONTENTS

- waterproof instruction book
- basic pain relief
- bandaging
- · blister pads/padding
- burns/sting relief
- · CPR mask
- · dental
- · 3-inch elastic bandage
- · eye pads/penlight
- · first aid blanket
- · minor wound care
- · nasal spray
- · nitrile gloves
- precision tweezers, scissors
- SAM™ splint
- scalpel
- skin stapler
- tape
- · room for personal medications
- airway
- · combine/triangular bandages
- · 6-inch elastic bandage
- · eye wash, sterile
- forceps, dressing
- · indigestion tabs
- · master directory of items
- quick ice
- · shears, EMT style
- sunscreen
- · tick removal kit







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Adventure Medical Kits Marine 2000

Intended for ship crews that are out to sea for more than 24 hours, the Marine 2000 Medical Kit is intended for crews who have the benefit of trained medical personnel on board. The kit features professional-grade supplies, including syringes and sterile needles for injections, sutures, dental repair supplies, and diagnostic instruments (including a blood pressure cuff and stethoscope).

This kit comes in a large, padded foam case with a texturized rubber bottom that protects its contents and keeps the kit from slipping on a wet surface, such as a deck or a dock. The kit has the equipment needed to safely administer CPR (without fear of transferring infectious diseases) with a CPR mask that has an O2 valve.

FEATURES AND BENEFITS

- · administer CPR safely
- · clean and close wounds
- · irrigation syringe and woun
- closure strips to clean and close any wound, plus sutures for serious lacerations
- $\boldsymbol{\cdot}$ deliver injections and IVs
- sterile needles, IV administration set, and angiocatheter for delivering IV medications and injections
- · monitor vitals
- blood pressure cuff, digital thermometer, stethoscope
- prevent hypothermia and shock
- SOL™ emergency heat-reflective blanket reflects 90 percent of radiated body heat
- stabilize fractures and sprains
- C-splint plus a wide variety of wraps and bandages to immobilize fractures and provide support



CONTENTS

Bandage Materials

- 16 bandages, adhesive, fabric, 1x3 inches
- 13 bandages, adhesive, fabric, fingertip
- 13 bandages, adhesive, fabric, knuckle
- 3 bandages, conforming gauze, 3 inches
- 2 bandages, elastic, selfadhering, 2 inches
- 3 bandages, elastic, selfadhering, 3 inches
- 8 bandages, waterproof, assorted, 30 pieces
- 20 dressings, gauze, non-sterile, 4x4 inches
- 14 dressings, gauze, sterile, 2x2 inches, 2 packs
- 8 dressings, gauze, sterile, 3x3 inches, 2 packs
- 14 dressings, gauze, sterile, 4x4 inches, 2 packs
- 5 dressings, non-adherent, sterile, 3x4 inches
- 1 dressing, transparent,
 2 x2¾ inches
- 2 dressings, transparent, 4x4¾ inches
- · 2 eye pads, sterile

Bleeding

- 10 gloves, nitrile (pair), hand wipe (intl.)
- 2 instructions, marine Easy Care™ bleeding
- · 2 trauma pads, 5x9 inches
- · 1 trauma pad, 8x10 inches

Blister/Burn

- · 2 aloe vera gel with lidocaine, 1 ounce
- · 1 GlacierGel™ (large, oval)
- ·1 GlacierGel™ (small, rectangular)
- 1 moleskin, pre-cut and shaped (14 pieces)

CPR

·1CPR pocket mask

Dental

- •10 cotton pellets
- · 4 cotton rolls
- 1 dental mirror
- · 1 dental spatula
- 1 temporary cavity filling mixture
- · 1 wax rope

Fracture/Sprain

- · 1 bandage, elastic with Velcro®, 4 inches
- · 1 bandage, elastic with Velcro®, 6 inches
- · 2 bandages, triangular
- · 2 cold packs
- · 1 instructions, Marine Easy Care™ Fracture & Sprain
- ·1C-splint, 4x36 inches
- 2 SAM™ splints, finger

Instruments

- · 1 airway, oral, (set of s sizes)
- 1 blood pressure cuff
- •1 EMT shears, 4 inches
- 1 Foley catheter, silicone, 16fr, 5 ml
- ·1 pencil
- 6 safety pins



Trauma Kits

- ·1 scissors, stainless steel, 5 inches
- · 1 splinter picker/tick remover forceps
- ·1 stethoscope
- · 1 thermometer, digital
- · 4 tongue depressors, wooden

Medical Information

- · 1 Complete Guide to Marine Medicine
- · 1 patient assessment form

Medication

- · 12 acetaminophen (500 mg), 2 packs
- · 1 After Bite® wipe
- ·1 Ben's 30% Tick & Insect Repellent®, 1.25 ounces
- · 3 antacid, packages/2
- · 12 antihistamine (diphenhydramine 25 mg) tabs
- · 6 aspirin (325 mg), 2 packs
- 12 cold medicine tabs. Medicidin-D™, 2 packs
- 6 cortisone cream 1%. 1/32 ounces (0.9 gram)
- · 8 cold relief tabs, 2 packs
- 12 diamode (loperamide HCI 2 mg), 1 pack
- · 12 diotame (bismuth subsalicylate), 2 packs
- 1 ear drops, 1 fluid ounce
- · 2 eye wash, 2/3 ounces (20 ml)
- · 12 ibuprofen (200 mg), 2 packs
- · 1 instructions, Marine Easy Care™ Medication
- · 1 laxative, Metamucil® psyllium fiber, 12.2 grams
- · 10 meclizine (HCI 25 mg), 2 packs
- · 1 nasal decongestant spray,
- 1/2 fluid ounce · 3 oral rehydration salts
- · 6 Pepcid® AC acid reducer
- · 1 tolnaftate cream 1%, 15 grams
- · 4 TUCKS® hemorrhoid towelettes

Other

- · 1 hand sanitizer, alcohol, 2 ounces
- ·1 lip balm, SPF 30
- ·1 sunscreen, APF 30, 1 ounce
- ·1 zinc oxide, 1 ounce

Survival Tools

· 1 emergency reflective blanket. 84x56 inches

Suture/Syringe

- · 1 angiocatheter, 18g x 11/4 inches
- · 2 gloves, surgical sterile, size 7.5 (pair)
- · 1 gloves, surgical sterile, size 8 (pair)
- · 1 hemostat forceps, Kelly straight, 5.5 inches
- · 1 IV administration set, 15 drop
- · 1 Mayo Heger needle holder, 5 inches
- · 2 needles, disposable, sterile, 18g x 11/2 inches
- · 2 needles, disposable, sterile, 21g x 11/2 inches
- · 2 needles, disposable, sterile, 25g x 1/8 inch
- · 2 scalpels with handle, sterile. disposable, #11 blade
- 1 skin staple remover. disposable
- · 1 skin stapler (15), disposable
- · 1 surgical lubricant, sterile
- ·1 suture, nvlon, 3-0
- ·1 suture, nylon, 5-0
- · 2 syringes, Luer Lok, 3ml
- · 1 syringe, Luer Lok, 5ml
- · 1 thumb tissue forceps, mousetooth, 4.5 inches
- · 1 towel drape, sterile

Wound Care

- · 3 syringes, irrigation, 20cc, 18-gauge tip
- · 6 dressings, petrolatum, 3x3 inches
- · 20 antiseptic wipes
- · 15 alcohol swabs
- · 2 cotton-tip applicators, 2 packs
- · 2 instructions, Marine Easy Care™ Wound
- · 2 povidone iodine, 1 ounce
- · 1 scrub brush, sterile
- · 2 tape, 1 inch x 10 yards
- 4 tincture of benzoin topical adhesive, vials
- · 1 triple antibiotic ointment. 1 ounce
- · 8 triple antibiotic ointment. single use
- · 2 wound closure strips. 1/4x4 inches, 10 packs

Adventuremedicalkits.com

DARK (Direct Action Response Kit) Gen 3

Weighing in at only 2 pounds, the Generation 3 Direct Action Response Kit (DARK) is a scant 9x6x3 inches but comes packed with a host of items you will need in a severe trauma emergency.

Available in seven colors (Atacs, black, coyote brown, hi-vis orange, multicam, ranger green, and wolf grey), the Generation 3 DARK kit comes in three levels: CELOX, civilian, and law enforcement/military specifications. The one included in this article is the military specifications kit. because it includes the TCCC casualty documentation tool and the 14-gauge ARS decompression needle. Also included is a pair of rip shears in place of the standard trauma shears.

CONTENTS

- 1 pair nitrile gloves, size L
- 1 pair HALO seals
- · 1 nasal airway
- 14-inch Israeli bandage
- •1 QuikClot® combat gauze LE or CELOX Rapid (MIL-SPEC Kits contain QuikClot combat gauze MIL)
- · 1 H&H PriMed® compressed gauze

- · 1 Mylar blanket
- · 1 TCCC casualty documentation
- · 114-gauge ARS decompression needle

\$209.90 Darkangelmedical.com





Gear Guide.12.15

Phokus Sons Trauma Kits

Founded in 2008. Phokus Research Group's primary mission is to provide solutions to military men and women in the field: part of that mission was fulfilled with the addition to a suite of trauma kits to the company's growing line of products. The kits are designed to be durable, lightweight, efficiently organized and accessible during a traumarelated emergency.

Both the full-sized AVTK Vehicle Series kit and the pocket-sized Shield STK Series kit fit inside a waterproof, heavy-duty, medical-grade vinyl bladder that is designed to last as long as the supplies inside. The vinyl eliminates snag hazards when moving the kit and actually offers additional buovancy when submerged.

Besides offering pre-packaged kits, the company also offers a custom trauma kit. which includes gear to build anything from a personal first aid kit to advanced tactical combat care packs in any of the four bladder sizes offered.

Deployment Series

The original Phokus Trauma kit, it was designed and engineered to fit easily and securely behind a ballistic plate or concealable body armor. Not only does that protect the equipment, it also keeps the trauma kit where it is needed most: securely on the person.

Dimensions: 9x11 inches Thickness: 1/2 to 3/4 inch Weight: 11.7 ounces

CONTENTS

- Deployment Series: DTK
- ·1 Combat Gauze®
- · 2 4-inch Z-fold gauze bandages
- ·114G needle
- · 2 occlusive dressings
- •1 NPA with 550
- ·13-inch elastic bandage
- · 2 2-inch safety pins
- 1 nitrile gloves
- ·1 casualty card
- ·1 Sharpie® marker
- · 1 external pill pouch

What To Look For

When looking for a trauma kit, take into consideration how many people you might be treating, the possible contexts in which they will be treated (office, home, backcountry, etc.), and the level of expertise you have in treating patients in an emergency situation.

Low Visibility Series

This trauma kit is designed to fit easily in a cargo pocket or small pouch. Both versions (LVD and LVD II) are intended to complement the DTK/DTK II series, allowing the user additional gear for increased medical effectiveness.

Dimensions: 6x9 inches Thickness: 1/2 to 3/4 inch Weight: 8.7 ounces

CONTENTS

- · Low Visibility Series: LVD II
- •1 Combat Gauze®
- •14-inch Z-fold gauze bandage
- ·114G needle
- · 2 occlusive dressings
- ·1NPA w/550
- · 13-inch elastic bandage
- · 2 2-inch safety pins
- 1 nitrile gloves
- ·1 casualty card
- · 1 Sharpie® marker
- · 1 external pill pouch

Shield Series: STK

This kit was developed for military personnel who are in danger of injury but don't wear body armor. It is pocket sized and small enough to fit almost anywhere-from a cargo pocket to a small pouch on a bag. Smaller than the other kits, it contains just enough to stop major a bleeding incident.

Dimensions: 4x6 inches Thickness: 1/2 to 3/4 inch Weight: 6.3 ounces

CONTENTS

- · Shield Series: STK
- ·1 Z-Fold hemostatic gauze
- •1 secondary tourniquet
- 2 improvised occlusive dressings
- 6 2x9-inch tape strips

Vehicle Series: AVTK

This kit is intended for moving vehicles, such as boats, trucks, and planes, where having a trauma kit is beneficial. The Advanced Vehicle Trauma Kit (AVTK) is the largest of the bladders and is able to carry a larger variety of supplies to handle a bigger range of situations. Nevertheless, it is just as thin as the small kits.

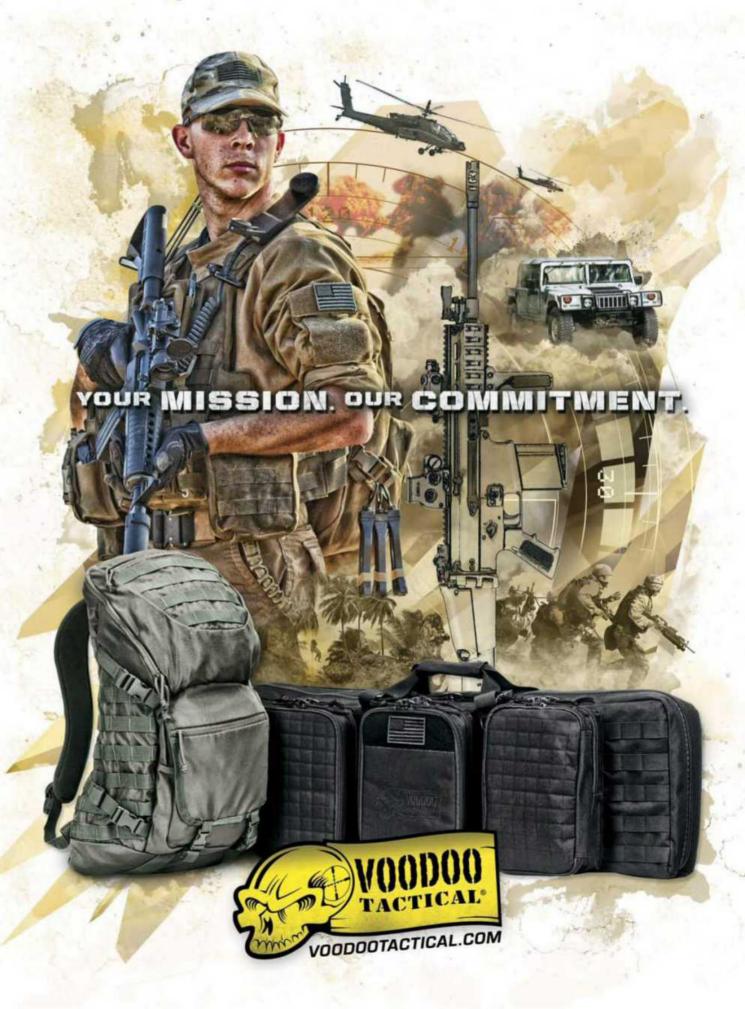
Dimensions: 9x10 inches Thickness: 1/2 to 3/4 inch Weight: 14.1 ounces

CONTENTS

Vehicle Series: AVTK

- •1 Z-Fold hemostatic gauze
- •14-inch Z-fold gauze bandage
- 1 CAT tourniquet
- · 114G needle
- 2 occlusive dressings
- ·1NPA
- 1 cravat
- 1 pressure dressing
- 1 nitrile gloves





NOT GUILIY

HOW TO OVERCOME SURVIVOR GUILT

Story by **Thomas J. Nardi, Ph.D.**

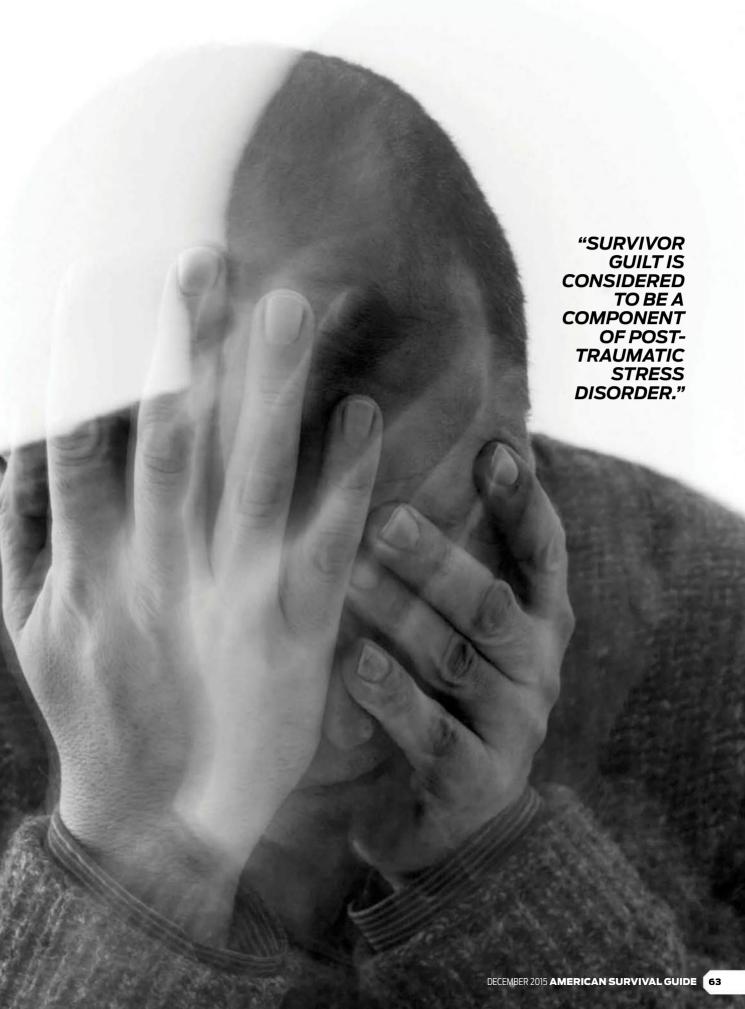
T IS A NORMAL FLIGHT ON A SMALL "PUDDLE-JUMPER" PLANE BETWEEN MINNEAPOLIS AND GRAND RAPIDS. FEELING CHATTY, YOU SPARK UP A CONVERSATION WITH THE WOMAN ACROSS THE AISLE. THE FLIGHT IS TURBULENT BUT NOTHING YOU HAVEN'T BEEN THROUGH BEFORE.

Suddenly, the oxygen masks drop from the ceiling, and the plane dives into a flat spin. You can barely breath through the mask, and the gutwrenching sounds of twisting metal and crunching plastic fill your ears.

The plane is falling from the sky, and you think you have only moments to live. Your eyes lock onto the woman's across the aisle. Hers are filled with panic as yours fade to black \dots

You wake up in the hospital. You survived what happened, but you're not sure how it was possible. Hours later, you discover that not only is the woman dead, but that you are sole survivor of the crash.

What are you feeling?



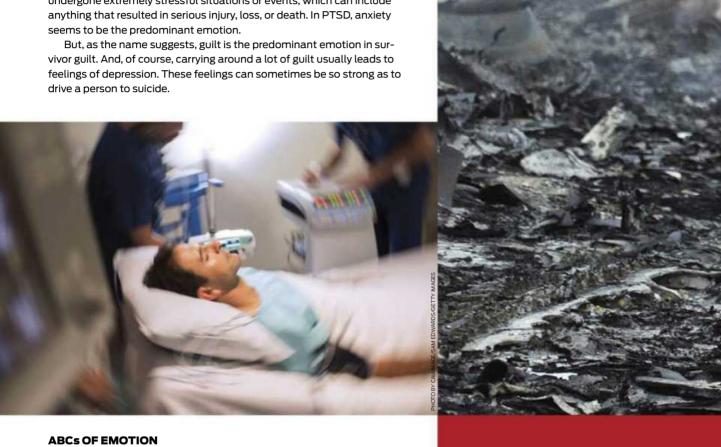
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SURVIVOR GUILT

After a near-death experience, most people might feel a great sense of relief. "I'm alive!" they may think. They may even feel a sense of gratitude. They can appreciate and be thankful that they survived. They may feel blessed.

Other people have a very different reaction. They do not feel blessed. They feel cursed; cursed with guilt—more specifically, with what has been labeled "survivor guilt."

Survivor guilt is considered to be a component of post-traumatic stress disorder (PTSD). PTSD is often found among those who have undergone extremely stressful situations or events, which can include



To understand survivor guilt, it is first necessary to identify where our emotions come from. What causes us to feel the way we do? Our emotions can be explained by the "ABC" model.

At A, we experience some adversity, such as surviving a traumatic event. At C, there is a consequence, or emotional reaction, such as guilt. Many people believe that their emotion (C) came from the traumatic event (A). They view it as a simple cause and effect: "That happened, so I feel this way."

Fortunately, they are incorrect. Why "fortunately?" Because if our emotions were simply the result of what happens to us, we would be powerless to control or change them. We would always be victims, helpless in the face of whatever life throws at us.

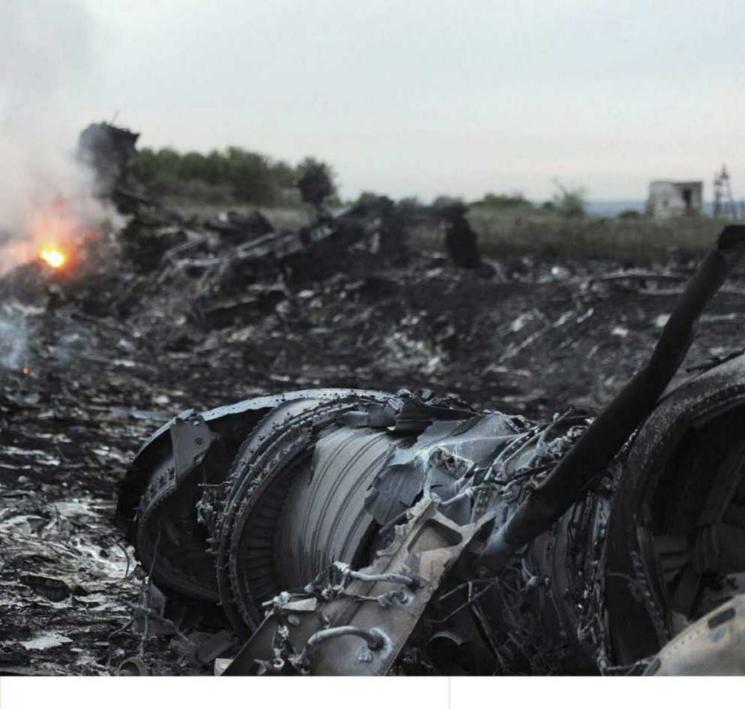
Fortunately, we are not condemned to be victims; we have a choice. The model also provides a B—our beliefs, or self-talk. It is not the A that creates the C: it is the B. What we believe and tell ourselves about the A determines what emotions we will feel.

Assistance Is a Call Away

)) When bad things happen to them, some people will ask. "Why me?" Those who survive traumatic events also often ponder the same question.

Some find solace in a religious or spiritual interpretation of what has happened. Indeed, religious and/or spiritual beliefs can be powerful resources in dealing with survivor guilt. Talking to a member of the clergy can be beneficial. Help is also available from trained mental health professionals.

Don't be afraid or embarrassed to seek help. We can all use help at one time or another. Trained professionals are there to help—not to judge you.



In other words: It is not the A of surviving the traumatic event that causes the C of survivor guilt. It is the B—what we believe and tell ourselves about having survived—that determines if we feel survivor guilt or not.

The following real-life case illustrates some of the beliefs that create or contribute to survivor guilt. It also shows how these beliefs can be challenged and changed. The names used are fictitious, but the events are true.

ASLEEP AT THE WHEEL—'TYRANNY OF THE SHOULD'

College student Mary and her friends were coming home from a ski weekend. Mary sat in the back seat. Jane had called "shotgun" and was sitting in the front with the driver. At first, Mary was disappointed but quickly settled into the back seat, curled up with a blanket and her music.

It was late. It was dark. It had been a long day. Mary fell asleep. Tragically, so did the driver. The car went off the road and crashed into some trees. The driver and Jane were killed. Mary survived, relatively uninjured more accurately, she was uninjured physically but quite injured emotionally. "... CARRYING AROUND A LOT OF **GUILT USUALLY** LEADS TO FEELINGS OF DEPRESSION. THESE FEELINGS CAN SOMETIMES BE SO STRONG AS TO DRIVE A PERSON TO SUICIDE."

Julian of Norwich

>> When Julian of Norwich (1342-1412) was a young woman, she contracted an illness and almost died. She lived when the plague known as the "Black Death" raged throughout Europe. Onethird of the population of Europe died. In Julian's town of Norwich, England. more than half the population was lost to the plague.

Julian may have experienced what today is called survivor guilt. If she did, she resolved it through her deep religious commitment to helping others. She concluded, "All shall be well, and all shall be well, and absolutely everything will be well."

Her words can serve as a reminder that no matter how bleak or bad things seem right now, things will get better.

"If I had called 'shotgun' first, I would have been killed instead of Jane," she said. This was quite probably true. But Mary was feeling a lot of guilt.

She was also telling herself other things that were definitely not true: that she should have called shotgun; she should have been in the front seat: and, worst of all, that she should have known that the driver would fall asleep and she should have made sure the driver stayed awake. Why? Because then, Jane and the driver would still be alive.

Mary felt guilty because she felt responsible for their deaths. Her "should" statements are what psychologists refer to as the "tyranny of the should." The messages she was giving herself were irrational. That is, they reflected faulty thinking and illogical conclusions. Nonetheless, she believed them and had never stopped to examine whether or not she was unfairly condemning herself by these beliefs. She put herself on trial mentally and found herself guilty without ever considering the evidence of the case she made against herself.

Her beliefs were challenged. The evidence was examined closely. Mary was shown that there was no way she could have known what was going to happen. She didn't cause the accident nor did she cause Jane to sit in the front seat or the driver to fall asleep.

Mary was helped to understand that what had happened was outside her control, but what she could control was what she told herself about the accident. Declaring herself guilty did not help her or her friends. Indeed, in truth, she had done nothing wrong, although she felt as if she had.

Mary was helped to identify and challenge her own thinking. When she changed her self-talk, she changed her emotions. The guilt lessened considerably, and she was able to grieve appropriately. It was a terrible accident, but it was not

her fault. She could feel, quite appropriately, a tremendous sadness at the loss, but she did not need to feel guilty about her actions.



"IT IS VERY IMPORTANT

TO SEPARATE FEELINGS

ACTIONS AND BEHAVIORS.

AND THOUGHTS FROM

HAVE TRANSGRESSED

GUILT MEANS YOU

IN SOME WAY."

GEORGE HARRISON—SELF-PRESERVATION

A documentary about the late former Beatle, George Harrison, sheds light on another aspect of how survivors sometimes react.

When singer Roy Orbison died, George Harrison called fellow musician Tom Petty. Harrison asked Petty, "Honestly, aren't you glad it wasn't you?"

Some people were shocked by Harrison's question. Others silently acknowledged that he was right. There is often a sense of "I'm glad it wasn't me" when a close acquaintance dies. Some people recognize that this is what they really do think and are fine with it. Others tell themselves (their B) they should not think that way. They then feel guilty (their C) for having had that original reaction. They judge themselves as "bad" for thinking the way they do. They feel guilty for having had those thoughts.



Recognizing that self-preservation is a very strong, powerful instinct can help one overcome guilt. Harrison did not wish Orbison would die; he just felt glad he, himself, was still alive. Being less self-critical and self-blaming can help reduce survivor guilt.

NOT GUILTY!

The thoughts that create survivor guilt can be challenged by simply asking oneself, "Have I done anything wrong?"

It is not a question of "Do I feel like I did something wrong?" but "Did I actually do something wrong?"

It is very important to separate feelings and thoughts from actions and behaviors. Guilt means you have transgressed in some way. You have violated some standard, broken some rule of behavior. If you believe you violated a standard, was it a realistic standard? Or was it more a reflection of the tyranny of the should—that is, some standard that is unrealistic and demands perfection but one that you erroneously believe you should follow?

Survivor guilt is based on faulty thinking. Challenge this faulty thinking. Replace it with correct, more-accurate messages, and the survivor guilt will lessen or disappear completely.

Remember: Good thinking gives good results.

About the Author: Dr. Thomas J.Nardi is a psychologist in private practice and the director of counseling programs for the Long Island University graduate campuses in Orangeburg and West Point, New York. He is certified in critical incident crisis management.

DO. DON'T STEW.

)) If you have survived a crisis, be proactive in appreciating life. Sitting around, brooding or mentally beating up on yourself, is counterproductive. Not only does it not help, it also makes you feel worse.

Push yourself to be active. Do things for yourself and others. Giving to others or donating your time through volunteer work or other community service can do a lot in reaffirming life and lifting your own spirits. Even just hitting the gym can help. Research has shown that moderate exercise or physical activity can help alleviate some forms of depression. urban.12.15

TIEGHTIQUES TECHNIQUES

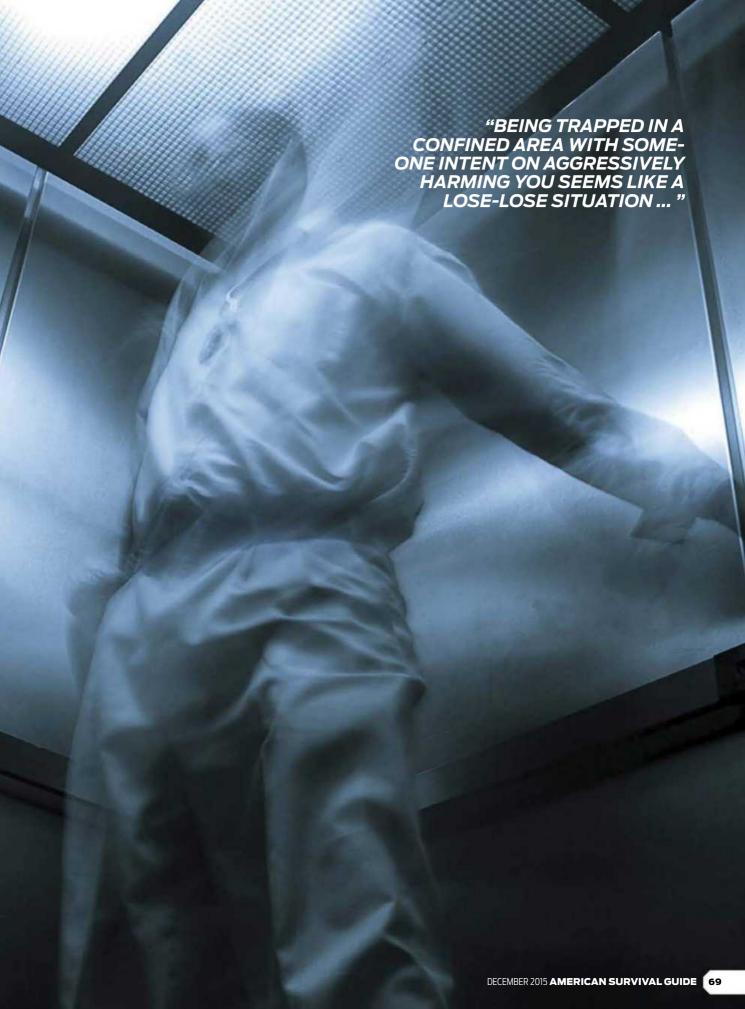
EFFECTIVE CLOSE-QUARTERS SELF-DEFENSE

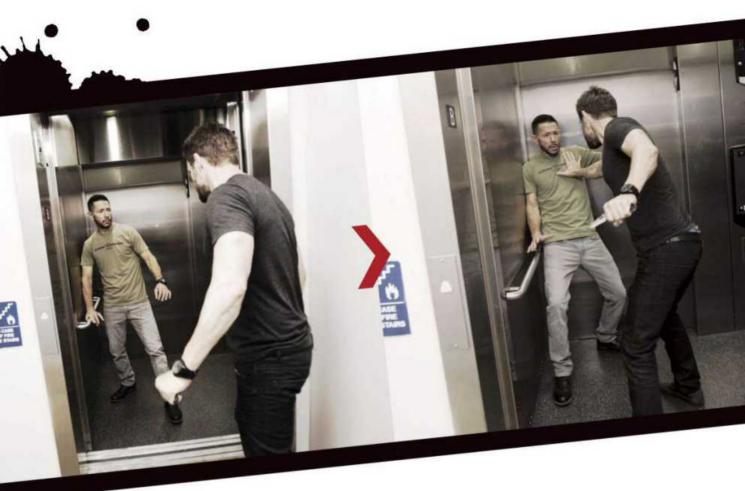
Story by **Michael D'Angona** | Photography by Henry Z. De Kuyper

NPROVOKED ATTACKS CAN OCCUR NEARLY ANYWHERE—IN YOUR HOME, ON THE STREET, OR AT YOUR PLACE OF BUSINESS. SUCCESSFULLY THWARTING AN ASSAILANT'S ATTACK IS NO SMALL FEAT, ESPECIALLY IF IT COMES AS A COMPLETE SURPRISE.

Imagine you are trapped within a small, confined structure such as an elevator with the same attacker, in a dance club with a crowd of people, or on a tiny stair landing. These scenarios magnify the severity of the initial situation tenfold.

Being trapped in a confined area with someone intent on aggressively harming you seems like a lose-lose situation ... but that doesn't have to be the case. In fact, knowing what to do—or, more importantly, what not to do—when a close-quarters conflict erupts will not only give you an edge on prevention, the tight confines of your surroundings might also enable you to take down your attacker when a full-scale fight ensues.





12.15

DEFENSE BEGINS WITH AWARENESS

First and foremost, the best possible way to prevent an unprovoked attack in a confined area is to avoid the situation altogether. This boils down to you being well aware of your surroundings at all times. Many confrontations simply would not occur if your pursuer had an indication you "were on to him," and his element of surprise would be disrupted.

"PREDATORS PREY ON DISTRACTED, CONFUSED, OR HEAVILY OCCUPIED PEOPLE." To accomplish this, you have to always walk with your head high, exuding confidence, as you scan the area for anything out of the ordinary. In addition, don't continuously look down at your cell phone or other electronic devices. These can distract you greatly, thereby granting someone the ease of fol-

lowing you down the street and eventually up to your front door, car parking space, or into an empty elevator. Predators prey on distracted, confused, or heavily occupied people. Don't be one of these targets, and you will greatly reduce your probability of being attacked.

Being aware of your surroundings also applies to confined indoor areas, such as dance clubs, restrooms, and small hallways or any area that limits your mobility while being surrounded by a large number of people. Always notice who is around you, who stays close to you, and who constantly watches your every move. They could be waiting for the right moment to strike. Don't give them that moment. Make it clear you are also watching them; and when they realize you won't be an easy victim, they will move on to another target.

USE YOUR SURROUNDINGS TO YOUR ADVANTAGE

One thing to keep in mind when or if you are attacked in a confined area is that the enclosed space or obstacles in your path can be a great advantage to you and not a hindering handicap. For example, being pinned against a wall by an assailant may seem like a no-win situation, but in reality, you actually have the upper hand.

First, your attacker will have one hand, if not both, occupied pressing you against the wall; you have both hands free, enabling you to strike his vital areas—including his eyes, nose, throat, and ears.

Second, with very slight movements, you can shift your body to one side or the other, utilizing your attacker's forward energy to essentially slam himself into the same wall you previously occupied. Remember also that you have both legs free to strike the lower portion of his body, including his groin, knees, and the sensitive nerves (sciatic, for example) that run along



(far left) Unprovoked attacks can happen very quickly, because the attacker has probably been following you for some time and has already formulated a plan. Stay alert to your surroundings.

(center) If an attack comes in tight quarters and there is no means to escape, do your best to immediately recognize the largest threat to your safety: Is it a fist, kick, head butt, or a weapon?

(right) Above all, try to gain control of the weapon if you know it will be used against you. Either block the strike or immobilize the arm. This is your first priority.

his legs. With his arms unintentionally supporting you, your balance while performing these strikes will be easy to maintain and allow you a full range of self-defense techniques.

One big mistake you must avoid is trying to use brute force to push your attacker back in order to release yourself from the wall. In most cases, it is a futile attempt, especially because your assailant has leverage—and you simply do not. You will not only use up nearly all your energy, but by struggling, you will also cause your attacker to become more aggressive. Clearly, this will cause a bad situation to get much worse.

The use of obstacles to slow down your attacker can be beneficial to keep him at bay until help arrives or until you can escape from the enclosed space. Trash cans, chairs, small tables, or other everyday objects can be used either to create a barrier or as blunt striking instruments. A continuous barrage of these items will wear down your attacker and give you the needed time to make follow-up moves or escape to safety.

USE THE PROPER TECHNIQUES

Self-defense and martial arts training are great ways to handle an unprovoked attack in a confined area. But be warned: Not all techniques taught in the dojo (training hall) or at the gym will apply to a close-quarters fight. You must be able to differentiate between techniques performed in class and those that apply to "reallife" self-defense.

Preventive Measures

HOW TO REDUCE YOUR RISK OF BECOMING A TARGET

)) There are many simple things you can do to lessen your chances of becoming a victim while in a confined location. Most are common sense; vet, most people are guilty of ignoring these. As a result, they become statistics for their local law enforcement

Pay attention to your surrounding area—not your cell phone. Cell phones have become a convenience and a curse. Constant viewing, texting, browsing, etc. takes your attention off your immediate area, giving your watchful predator means to surprise and take you out.

Unplug the headphones. As with cell phones, a great number of people are listening to music or calls through headphones. This hampers your sense of hearing so greatly that an assailant could be standing right behind you and you wouldn't know it. Turn your headphones off until you are in a more familiar and safe location.

Ease up on the alcohol. In a crowded dance club, the excess intake of alcohol can impede your mental sharpness. A predator could be standing behind you the whole night, watching

you lose sobriety until you become easy pickings to his attack.

Travel with a friend. If you intend to be somewhere unfamiliar and crowded with strangers, invite a friend to join you. Two sets of eyes are better than one to keep a lookout for people acting strangely or eveing you suspiciously. Additionally, an attacker is less likely to target you if you have a companion nearby.

Formulate an exit plan. In a crowded area, staying in the proper location can reduce your chances of being targeted. Stay away from back corners or hidden stairways. These are easy places for abductions. Instead, remain near the entrance and scan the room for other exits, including back doors or easy-to-reach windows.

Go or stay? Use your best judgment. Sometimes, it's best to cancel your initial plans if something just "feels" wrong to you. Trust your body's natural instincts. If you sense that an area or a crowded location might have some unexpected trouble, listen to yourself and just turn around and go home! It's clichéd, but true: Better safe than sorry.

"TRASH CANS, CHAIRS, TABLES, OR OTHER EVERYDAY OBJECTS CAN ALL BE USED ... AS BLUNT STRIKING INSTRUMENTS AGAINST YOUR ATTACKER."

First, in a small space such as a dance club or elevator, the use of high kicks should be practically eliminated. Even if you have had years of training using high kicks, the thought that you will take out your opponent with a jumping or spinning kick to his head is far fetched and should be avoided. You don't have the time or space to execute such a precise move.

Instead, keep your kicks at waist level or below and strike with quick snaps, as opposed to full-power strikes. Utilize your knees while you are being held by his grip. With a very small space between you and your attacker, knee strikes may be your only option to attack his lower body.

Punching techniques should also be adjusted to fit into a confined-space fight. Very wide, "knock-out" power punches may not be possible. Instead, use quick strikes aimed at his face, throat, and other sensitive areas. Keep your hands always up and in front of you. This allows you to counter his attacks while continuing your rapid assault.

Attackers like to grab and control their victims. Again, use this to your advantage: His weapons are tied up; yours are not. Continue striking while he holds you. You can do a significant amount of damage to him in a small amount of time—so much so that he might let you go just to escape your constant bombardment of hits.

Large, wide throws and ground fighting, although very popular today, are not recommended during tight-quarters fights. Lack of needed space limits your ability to execute a proper throw, and the fact that you might be attacked by more than one person cancels the thought to go to the ground to take out your adversary. You might succeed against him, but his cohorts kicking you while you're down will negate your short-lived victory.



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CARRYING WEAPONS ... THE PROS AND CONS

Carrying a weapon can aid you in surviving an attack within a confined space. However, not all weapons work equally to accomplish this and, in some cases, cause more harm than good. Having a firearm doesn't guarantee success, especially in tight and confined areas. First, accessing your firearm when your attacker is upon you is not an easy task. You don't have seconds; you have fractions of a second.

"HAVING A FIREARM DOESN'T GUARANTEE SUCCESS, ESPECIALLY IN TIGHT AND CONFINED AREAS."

Without consistent practice, you won't be able to get a grip on your weapon, to say nothing of being able to fire it and land a shot that puts your attacker down. Second, a firearm can be taken away from you as you reach for it and then used by your attacker. This is definitely a worst-case scenario, but one that must be considered, nonetheless.

Pepper spray is an option, but again, firing in a confined space could affect your attacker and you, as well. All it takes is a few particles dispersing in your direction, and you will soon find yourself literally crying, temporarily blinded, and unable to continue the fight.

A pocket knife and extendable baton are two weapons that work well in a confined space. A knife can be opened quickly at the first signs of danger, is effective for offense and defense, and is difficult for your attacker to counter.

An extendable baton is compact, even when extended (its total length is usually between 16 and 21 inches), offers "rapid-fire" strikes, and can be used to secure your attacker using elbow, shoulder, and other joint locks. The knife and baton are both easily concealable, so you have the element of surprise on your side if confronted.

A special thanks to Jarret Waldman at Krav Maga Unyted in Los Angeles for providing the expertise during the photoshoot. SOURCE: Unytedfitness.com

Pattern 41 Blades

Overall Length: 7 5/8", Blade Length: 3", Width: 1", Thickness: 1/8"

CAT.#	STEEL	FINISH	PRICE
J4198	1095	Satin	24.95
J419K	1095	Black Teflon	24.95
J4127	D2 Steel	Peened	32.95
J4128	D2 Steel	Satin	32.95
J4137	CPMS 30V	Peened	42.95
J4138	CPMS 30V	Satin	42.95
J4189	Damascus		79.95

Pattern 42 Blades

Overall Length: 6 5/8", Blade Length: 2 5/8", Width: 7/8", Thickness: 1/8"

CAT.#	STEEL	FINISH	PRICE
J4298	1095	Satin	24.95
J429K	1095	Black Teflon	24.95
J4227	D2 Steel	Peened	32.95
J4228	D2 Steel	Satin	32.95
J4207	440C	Peened	32.95
J4208	440C	Satin	32.95
J4257	CPM154	Peened	39.95
J4258	CPM154	Satin	39.95
J4289	Damascus	Random	69.95

Pattern 44 Blades

Overall Length: 6 1/2", Blade Length: 2 1/2", Width: 1 1/8", Thickness: 1/8"

CAT.#	STEEL	FINISH	PRICE
J4498	1095	Satin	24.95
J449K	1095	Black Teflon	24.95
J4427	D2 Steel	Peened	29.95
J4428	D2 Steel	Satin	29.95
J4407	440C	Peened	29.95
J4408	440C	Satin	29.95

Pattern 45 Blades

Overall Length: 7 3/16", Blade Length: 3 1/4", Width: 1 1/16", Thickness: 1/8"

CAT.#	STEEL	FINISH	PRICE
J4598	1095	Satin	24.95
J459K	1095	Black Teflon	24.95
J4527	D2 Steel	Peened	32.95
J4528	D2 Steel	Satin	32.95
J4507	440C	Peened	32.95
J4508	440C	Satin	32.95
J4589	Damascus	Random	79.95



Kydex

Kydex Belt Clip

KT410

KT455



G3660



Kydex Belt Clip

21.95

C

В

В

В



USA PARAGORD

KT455



12.95

9.95

Overall length 7 5/8", Blade Length 3", Blade Width 1 1/8", Blade Thickness 5/32". Bolster holes 1/8", Handle Holes 1/4", Thong Hole 1/4". Cryo Tempered.

CAT.#	STEEL	FINISH	HRC	PRICE
J3128	D2	Satin	59-61	31.95
J3148	154CM	Satin	58-59	35.95
J3198	1095	Satin	57-58	24.95
J319K	1095	Black	57-58	24.95
J3189	Damascus	Etched	58-60	99.95

Handles for Pattern 31



Contoured and textured handles for Pattern 31. Cut slightly oversized for proper fitting. handle options are offered online.

OAI.#	COLOIT	IVIAILITAL	1 1110
D3149	B.I./Cocobolo	Dymondwood	16.95
G3119	Black	G10	18.95
G3129	Red	G10	18.95
Handles I	Basket Weave To	exture	
CAT.#	COLOR	MATERIAL	PRICE
M3131	Red	Micarta	16.95
G3111	Black	G10	21.95
G3131	Orange	G10	21.95
G3151	Olive Drab	G10	21.95

Rivets/Pattern 31

Torx Screw for use with the G10 textured handles. Corby rivets for use with

ymonawood nandies for flush surface.				
AT.#	TYPE	ALLOY	PRICE	
451	Torx	Brass	3.95	
461	Torx	Stainless	4.95	
660	Corby	Brass	3.49	
	Ol	04-1-1		

ters /Pattern 31

260 brass and 410 stainless, with matching pins. 3/16" for G10 contoured handles and 1/4" for Dymondwood handles.

CAT.#	THICK	ALLOY	PRICE
K311	3/16"	Brass	6.95
K316	3/16"	Stainless	6.95
K313	1/4"	Brass	6.95
K314	1/4"	Stainless	6.95

Pattern 36 Blades

Overall length 7 5/8", Blade Length 3", Blade Width 1", Blade Thickness 1/8". Bolster holes 1/8", Handle Holes 1/8", Thong Hole 1/4". Flat ground.

CAT.#	STEEL	FINISH	HRC	PRICE
J3628	D2	Satin	59-61	31.95
J3638	CPMS30V	Satin	59-61	41.95
J3608	440C	Satin	57-58	31.95
J3698	1095	Satin	57-58	24.95
J369K	1095	Black	57-58	24.95
J3689	Damascus	Etched	58-60	74.95

Handles for Pattern 36

Contoured and textured handles for Pattern 36. Cut slightly oversized for proper fitting. More handle options are offered online.

CAT.#	COLOR	MATERIAL	PRICE
D3653	B.I./Rosewood	Dymondwood	16.95
E3601	Birdseye Maple	Wood	24.95
E3672	Desert Ironwood	Wood	39.95
Handles	s Basket Weave Tex	cture	
CAT.#	COLOR	MATERIAL	PRICE
G3610	Black	G10	21.95
G3630	Orange	G10	21.95
G3650	Olive Drab	G10	21.95

Pins/Pattern 36

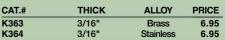
Handle pins available in brass and stainless steel. (Set of 6)

AT.#	SIZE	ALLOY	PRICE	
3826	1/8"	Brass	1.99	
0.40	4 (01)	04-1-1	4 00	

2			
3826	1/8"	Brass	1.99
846	1/8"	Stainless	1.99
	The state of the s		

Bolsters/Pattern 36

Bolsters are oversized, for proper fitting and include two matching pins. Dry fit bolsters and polish front edges before peening it to the blade.

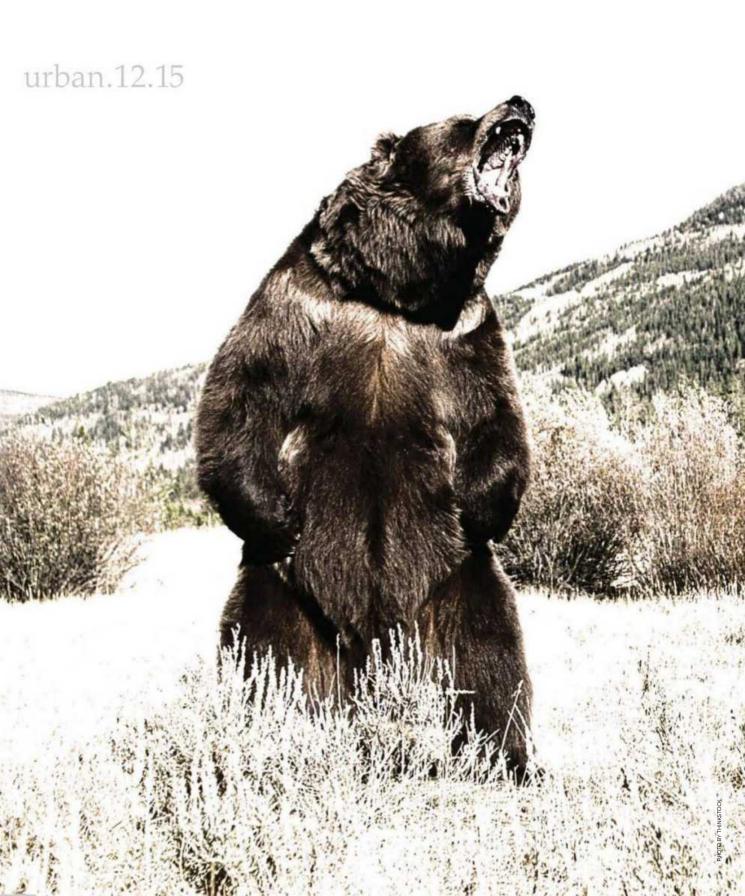


Gift Certificates, Knife Projects and other knifemaking supplies online.

G10

Blue/Black

Download our digital catalog online or request our full color catalog for only \$5.00 postage.





BACKCOUNTRY SURVIVAL STRATEGIES AGAINST DEADLY ANIMAL CHARGES

Story by Laura Lancaster

ou're headed down a trail through the brush. You're alone and tired, it's late, and your head is down to watch the trail in front of you. Then, you turn a sharp corner and come face to face with a tough-looking black bear with two cubs huddled around her feet. The animal turns to face you and snarls. It stamps its foot. It lays back its ears. You freeze in your tracks, and your mind races.

What should you do if the bear starts to charge? Fight or flight?

A bit of pre-planning for this type of situation can go a long way toward saving your life. Your response to an animal charge could easily be the difference between life and death, and you need to have the confidence and presence of mind to act decisively and quickly.

However, there isn't a one-size-fits-all way to handle a deadly animal charge. Should you run or stand your ground? Maintain eye contact or avoid making eye contact? Is the animal charging you to defend its territory or its young, protect a kill, or make you its next meal? Whatever the reason, the consequences can be deadly.

Let's take a look at some of the deadliest animals in North America to better understand why they charge people and what you can do to optimize your chances of survival.

BEARS

It may well go against every instinct you have, but *if you find yourself on the wrong side of a bear charge, don't run*. Even a slow bear is going to outrun you, and the last thing you want is to act like prey in the face of a predator. Now is the time to get out your bear spray or any other weapon you might have at hand and stand your ground.

After that first, cardinal rule of not running if charged by a bear, your response depends, in part, on the type of bear you're dealing with. There are three major types of bears in North America, and their reasons for charging can vary.

"... THERE IS NO WAY TO KNOW IN ADVANCE WHAT THE BEAR WILL DO, AND, WHILE IT IS RARE, GRIZZLIES WILL ATTACK AND EVEN KILL PEOPLE." Grizzly Bear: A grizzly's size makes it one of the most formidable predators in the world. If you find yourself being charged by a grizzly, know that the charge may only be a bluff. In a bluff charge, a bear will run right at you at top speed but then veer off at the last minute. Stand tall, firm, and get ready to use your bear spray as soon as the bear is in range (usually 25 feet or fewer). Of course, there is no way to know in advance what the bear will do, and, while it is rare, grizzlies will attack and even kill people.

If a grizzly knocks you down, first try to play dead. Curl up into a ball and protect your head and neck with your arms. Frequently, the bear will stop its attack after a short period of time, particularly if you're attacked by a mother with cubs. If the attack becomes prolonged—that is, the bear is trying to eat you—stop playing dead and fight back with any weapon available. Black Bear: Black bears are, by far, the ones you are the most likely to run into in the lower 48 states. In a few states, black bears have become accustomed to entering small communities to scavenge for food, so dangerous encounters are a real possibility. At the height of summer, a black bear needs to eat 20,000 or more calories a day, and your groceries are an easier way to get those calories than whatever berries might be around.

You can help to protect yourself from black bears in the backcountry by carrying an odor-resistant bag for your food and practicing proper food storage by hanging your food from a tree or using a bear canister.



When you head into bear country, it's important to be prepared for a chance encounter. I always have Counter Assault's Bear Deterrent® attached to the front shoulder strap of my backpack so it's easily accessible if I need it.

While it's been approved by ursine biologists for use against any and all bears you might encounter, what happens if it's the only weapon on hand when you're facing a different threatening animal?

The good news is that Counter Assault Bear Deterrent (www.counterassault.com) has not only been used to stop charging moose, bison, and mountain lions, it has even been used effectively against elephants! This is due to a high concentration of capsaicin, an oil derived from chili peppers (yes, the same ones you find in spicy foods). A blast of Counter Assault Bear Deterrent for six seconds from 25 feet away causes the eyes and lungs to constrict while simultaneously inflaming and burning the skin. All of this works to counter aggressive behavior and turn just about any dangerous animal from fight to flight.

Keep in mind that most fatal black bear attacks in North America are the result of male black bears silently stalking one or two people in the backcountry. You can increase your odds of survival by traveling in groups and staying aware of your surroundings at all times.

Although they are smaller than grizzlies, black bears are often highly aggressive. If you are charged by a black bear, stand your ground, but do not play dead if the bear knocks you down. Polar Bear: Polar bears are extremely dangerous. They live in a harsh, barren landscape. where food sources can be few and far between. Significantly less accustomed to humans than black bears, polar bears are known for stalking people for food. When you are in polar bear country, be alert at all times to your surroundings and mindful of all weapons and avenues of escape at hand. Polar bears rarely bluff, so if you are charged, be prepared to fight like hell.

MOOSE

A moose is one of the most unpredictable animals in the backcountry. A general rule of thumb is to stay 25 yards away from a moose, but there are so many caveats to this-including young males, a cow with a calf, and anything to do with rutting season—that it's best to stav wav. wav back from a moose.

If you're in the vicinity of a moose, watch for signs that the moose is becoming agitated. These can include the hair standing up on its rump, the moose laying back its ears, or smacking its lips. If a moose starts to approach you, back up slowly and look for shelter behind a big tree or other large obstacle.

If a moose charges you, you'll want to run, and run fast. Moose can reach speeds of up to 35 mph and weigh up to 1,500 pounds. In most situations, a moose will stop charging after it has decided you're far enough out of its territory. However, if it catches up and knocks you to the ground, curl up into a ball and protect your head and neck with your arms. Wait until the moose has moved on before attempting to get up, or it might resume its attack.

Moose have a reputation for being orneryand for good reason. There won't always be warning signs from a moose that it is about to charge. Whenever you are in the presence of a moose, be aware where your nearest avenue of escape is.



ANIMAL SPEED VS. WEIGHT VS. DISTANCE						
Animal	Speed (mph)	Weight (lbs.)	50-Yard Dash (sec.)			
Mountain Lion	50	135	2.04			
Wolf	43	110	2.37			
Grizzly Bear	40	900	2.92			
Black Bear	35	600	2.92			
Brown Bear	35	1,000	2.92			
American Bison	35	2,000	2.92			
Moose	35	1,500	2.92			
Polar Bear	25	1,300	4.09			
Human	15	185	6.91			



BISON

Despite their comparatively benign appearance, bison will charge and gore anyone it thinks has gotten too close. These are rarely false charges, and there can be little doubt what will happen if a 2,000-pound animal runs you down.

Fortunately, bison typically frequent grassland and other open areas, making it much harder to come across them unaware. If you do find yourself in a bison's space, however, remember that, like moose, bison are unpredictable and can easily reach speeds of up to 35 mph.

Despite their size, they can pivot quickly, so watch the bison for any warning that it might be about to charge. This includes tail-raising, snorting, foot-stomping, and shaking its head back and forth. If you see any of these signs, back away slowly.

Don't assume you'll be safe if you decide to take cover in your car, because bison have been known to charge cars. When driving through bison country, use precaution, drive slowly, and avoid honking your horn.

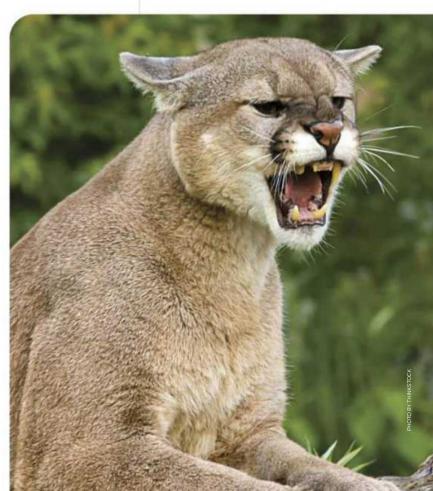
MOUNTAIN LIONS

It is extremely rare to run across mountain lions, because they do everything possible to avoid human contact. If you happen to be one of the lucky (or unlucky) few to run across one in the backcountry, practice extreme caution.

First, consider the conditions under which you've encountered the mountain lion. Are you near its den? Is there a kill nearby it might be protecting? Are you between a cat and her kittens? Identify the source of the mountain lion's anxiety and start to back away from it slowly.

Keep your eyes on the mountain lion at all times. Do not run; as with wolves and bears, the mountain lion's predatory instinct will take over. If the mountain lion starts to approach you at all, make yourself as large as possible by waving your arms above your head, yelling, and throwing sticks or rocks. Maintain eye contact with the cat, and make sure it has an avenue of escape when it's ready to disengage.

If you are charged, fight back with everything you've got. Generally, mountain lions will only attack people if they (the mountain lions) are desperate, so do everything thing you can to convince them that you are not an easy meal source.





"IF A WOLF SNARLS AT YOU. TAKE HEART—WOLVES ARE NOT KNOWN TO SNARL AT THEIR PREY BEFORE THEY ATTACK."

WOLVES

While wolf attacks remain a rarity, their population is on the rise in many parts of the western United States. If you live in an area with an active wolf population, take precautions to protect yourself and your family. Ensure that it can't access the garbage outside your home. Keep your dog leashed. Never leave small children unattended. Like bears, wolves are predators. If a wolf is acting aggressively toward you or is just curious, do not run and do not turn your back. But, unlike with mountain lions, try to avoid making eye contact with the wolf. A wolf might interpret eye contact as a direct threat and become increasingly hostile.

If a wolf approaches you, wave your arms, yell, and generally treat the wolf like it's a bad dog. If the wolf snarls at you, take heart—wolves are not known to snarl at their prey before they attack. If it continues to approach you, throw rocks, continue yelling, and prepare to use your bear spray or any other weapon at hand.

KEEP A SHARP EYE

In the backcountry, the best offense is a good defense, so take the time to better understand the dangers you might encounter. If you are traveling on public land, call your nearest ranger station to learn about any problematic wildlife situations you might encounter. Make sure all members of your party are prepared to deal with dangerous animal encounters in case anyone is separated.

Finally, if you find yourself staring down your worst nightmare, stop and ask yourself: Fight or flight?

QUICK NUMBERS: ANIMAL ATTACKS

BEAR

In the last 10 years, there have been 27 bear attacks in North America. resulting in 29 deaths. Of these, 15 were in Canada, three in Alaska, two in Tennessee, and single fatal attacks happened in New York, New Mexico. California, Pennsylvania, Colorado, Utah, and Montana, Black bears caused 17 of those attacks: 10 were by grizzlies. This averages around three fatalities a year.

BISON

According to the Department of the Interior, between 1980 and 1999. bison charged and injured 79 people in Yellowstone National Park (three times more than bears), with injuries ranging from puncture wounds and broken bones to bruises and abrasions. One person was killed. As of this past July, four people have been hospitalized as a result of bison attacks in Yellowstone.

MOUNTAIN LION

Since the middle 1980s, mountain lion attacks on people have increased dramatically. For example, in California, there were two fatal attacks in 1890 and 1909 and no other attacks for 77 years, until 1986. From 1986 through 2010, 18 verified attacks occurred—an average rate of over one per year.

WOLF

Biologist Mark E. McNay compiled a record of wolf-human encounters in Canada and Alaska between 1915 and 2001. Of the 80 described encounters, 39 involved aggressive behavior from apparently healthy wolves and 12 from wolves confirmed to be rabid. The first fatal attack in the 21st century occurred in 2005, when a man was killed in Saskatchewan, Canada, by wolves that had been used to human presence. In 2010, a woman was killed by wolves while she was jogging near Alaska's Chignik Lake.

urban.12.15 THE VHM 5.56MM PISTOL FOR WHEN
THINGS DON'T GO AS PLANNED

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STONE 200 DE DON'T GO D Story and Photography by Garrett Lucas 82 AMERICAN SURVIVAL GUIDE DECEMBER





NUTS AND BOLTS

Before we can talk about the need for a weapon such as the 5.56MM Pistol, we need to know what it is. As mentioned, it's a pistol based on the design of an AR-15 rifle. The only thing that differentiates it from a rifle is that there is no stock, although the buffer tube has to stay in place for proper operation.

The YHM 5.56MM Pistol has a 10.5-inch barrel—versus a 16-inch barrel, which is the minimum for most rifles sold on the market. The barrel is made of 4140 steel, has a melonite QPC finish, and a 1:9 twist. The pistol's amenities include YHM's Phantom 5C2 Flash Suppressor and its KR7 midlength Keymod handguard. Other accoutrements are regular fare, including the standard trigger guard and pistol grip.

The pistol's upper and lower are constructed of 7075-T6 aluminum. The

THE ARGUMENT

As with any topic of discussion, there are opposing viewpoints regarding the practicality and efficacy of a pistol that's built from a rifle design. Naysayers will say it's not a stable shooting platform, because it can be a bit awkward to engage with a two-handed hold (as you would use on a rifle), since there's no shoulder stock (more on that later).

On the other hand, because of the design and its capacity for larger rounds, these types of pistols are a bit heavy for one-handed shooting and aren't as concealable as a regular handgun. Some, therefore, may ask, "What's the point?"

I can quickly think of several reasons such a weapon makes perfect sense.

The first is caliber size. Because the 5.56MM Pistol fires the 5.56/.223 round, it provides a significant increase in terminal performance over common handgun rounds—even with the shortened, 10.5-inch barrel.

Don't believe me? Take a look at what our military personnel are using on the field—it's



apply only to pistols. Most states will not allow citizens to legally conceal a loaded rifle in a vehicle that is ready for rapid deployment.

The YHM 5.56MM helps bridge that gap by providing a package that packs a powerful punch and offers higher capacity than most handguns, but it does so with a product that is classified as a pistol. This means it can be carried concealed by any CCW holder, provided it is legal to own this type of firearm in a given state. In short, it's a compromise tendered by YHM to give everyday people access to a more potent alternative while staying within the bounds of the law.

Is it an ideal solution? No. The first prong of an ideal solution would be for everyone to have access to short-barreled rifles that can be fired from the shoulder without having to undergo an arduous background investigation and having to pay a special tax to exercise a fundamental right.

The second prong of the ideal solution would be for all states that allow concealed carry to include these types of firearms and full-sized shotguns and rifles—not just handguns. Luckily, the state I live in allows the concealed carry of any weapon as long as it is legal

"ANYONE WHO GETS A
PISTOL OF THIS TYPE
NEEDS TO MAKE A
POINT OF ACQUIRING
SUCH A SLING FOR ANY
SERIOUS WORK."

(above)An excellent offering on the Lucid M7 Micro Dot is the ability to use commonly found AAA batteries, rather than the hard-to-find button types.

(left)The Lucid M7 Micro Dot Optic is the perfect companion to a weapon of this type. It provides a low profile but still allows for quick target acquisition.

(bottom) The YHM 5.56MM Pistol, dressed with the Lucid M7 Micro Dot, is a svelte package more easily concealed than a standard AR rifle. Nevertheless, it still provides the benefit of the rifle caliber and the higher-capacity magazines to which AR users are accustomed.



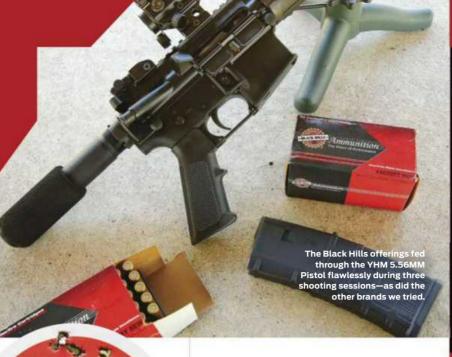
to own it, and, because I live in the South, there aren't nearly as many prohibitions as you might find in the "left-leaning" states.

DISCREET CARRY

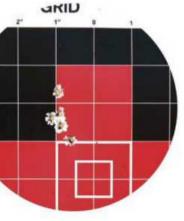
Yeah, the kid in us wants to get all tacti-cool and wear the latest operator apparel and stuff our gear into the latest tactical bags and packs. But in a real survival scenario—and especially during normal life—a low profile would draw much less attention.

For example, let's say you have a YHM 5.56MM Pistol, and you throw it into a great, little case you bought from a tactical gear vendor. It has all the magazine pouches and attachment points you could need. You're not walking down the street with that on your shoulder without everyone knowing what it is. Further, if you have it tucked in your vehicle and





With the use of a singlepoint sling to stabilize the 5.56MM Pistol, we were able to tighten up the groups dramatically while shooting off hand at 15 yards.



From the bench, with the Lucid M7, we were able to obtain groups with spreads between 1.25 and 1.40 inches with the Black Hills 55-grain soft-point rounds at 25 yards. someone happens to catch a glimpse of it, you might as well have a "steal me" sign painted on it.

To me, it makes sense to blend in with the natives. That's why we contacted BLACK-HAWK! and asked the company if it would provide one of its Diversion Racquet Bags for review and for use with the YHM 5.56MM Pistol. The Diversion Racquet Bag is made of 420 velocity nylon, has a nicely padded interior to protect the firearm, and includes a divider that will allow the user to carry two firearms instead of one.

I found that carrying two firearms made the Racquet Bag bulge a bit much, and it didn't look natural. However, the internal divider provides an excellent way to separate one firearm from several magazines and other small gear you might want to carry. It comes in three colors (red, blue, and black) with white accents, and it will carry firearms up to 29 inches in length.

The Diversion Racquet Bag has been around for a few months. I've used it on multiple occasions to carry firearms in public and haven't even gotten a second glance. It's easy and comfortable to carry, with both a shoulder strap and hand straps, depending on user preference. And, because of the Racquet Bag's round shape at one end, there's plenty of room for an installed optic on the firearm, so there's no worry about a tight fit with the zipper (unless you're going crazy with the optic size).

LUCID M7 MICRO DOT

Speaking of optics, another accessory we received for review with YHM's offering is Lucid's M7 Micro Dot optic. The M7 is a low-profile optic that has a 21mm objective, is parallax free with unlimited eye relief, is fog- and water-proof, and even has an auto brightness sensor

SPECIFICATIONS

YHM 5.56 MM Pistol

- Forged 7075-T6 aluminum YHM lower receiver
- Forged 7075-T6 flat-top A3 upper receiver with M4 feed ramps and "T" marked
- 10.5 inches, 1:9-inch twist, 4140 steel barrel with a melonite QPQ finish, threaded ½ inch x 28.
- YHM Phantom 5C2 flash hider/compensator
- YHM KR7 mid-length handguard (YHM-5305)
- Direct impingement carbine-length gas system
- Standard 30-round magazine
- Includes all internal parts
- Total weight: 5.4 pounds

MSRP: \$2,007 YHM.net

SPECIFICATIONS

Lucid M7 Micro Dot

- · Cast aluminum frame
- Built-in rail mount
- · Weight: 4.6 ounces
- · Water- and fog-proof
- · 100% shockproof (.458 SOCOM)
- · Reticle: 2MOA dot 25MOA circle
- · Auto brightness sensor
- Auto shut-off (2 hours)
- 7 brightness levels
- Battery: 1 AAA (not included)
- 1/2 MOA adjustments
- Parallax-free
- 21mm objective lens
- 1x unlimited eye relief
- Limited lifetime warranty

MSRP: \$229 MyLucidGear.com

SPECIFICATIONS

BLACKHAWK! Diversion Racquet Bag

- Constructed of 420 velocity nylon
- Internal divider for carrying up to two firearms or separated upper/lower AR-15 receivers (up to 29 inches long)
- Padded walls with inner shell to hide firearm(s) outlines
- · Heavy-duty, lockable zipper sliders
- · Available colors: black, gray/blue, gray/red

MSRP: \$71.45 Blackhawk.com



to adjust the intensity level according to ambient light.

Lucid claims that the M7 is 100 percent shockproof, having been tested with .458 SOCOM rounds, and it comes with spacers so the user can adjust the height of the optic. The red dot's coverage is 2 MOA, which translates to 1 inch at 50 yards (think in terms of pistol shooting) and .5 inches at 25 yards. Adjustments can be made in 1/2 MOA increments, which means that at 50 yards, it'll take four clicks to make a 1-inch adjustment. And that was about to be the next step of the process.

"THIS PISTOL **WAS RELIABLE FROM THE FIRST ROUND** TO THE LAST. **TOTALING NEARLY 300** ROUNDS."

SOME STRESS RELIEF

Because there are no major calamities occurring at the present time, making use of the YHM 5.56MM Pistol was limited to the range; hopefully, it stays that way. But, with what's happening in the world today, it definitely pays off to have practice time logged.

We set up the M7 Micro Dot to zero to get a feel for the pistol's reliability and accuracy. During the session, we fed it a few generic brands of .223 practice ammunition, along with a healthy supply of Black Hills loads, including the 55-grain soft-point and the 60-grain V-MAX.

Throughout the shooting sessions that day and on subsequent days, we experienced no malfunctions with any ammunition we tried. The YHM pistol seemed to prefer the Black Hills 55-grain soft-point rounds. We were able to consistently get 1.25- to 1.40-inch groups at 25 yards with that load and the Lucid M7 Micro Dot. Considering the lack of a stock and

(left) The Blackhawk Diversion Racquet Bag offers a discreet way to carry a more-potent self-defense package in public without raising any eyebrows. Passersby took no notice of the innocuous-looking weapon case. (above) The interior of the Blackhawk Diversion Racquet Bag is well padded for a firearm's protection, and the bag includes a center divider for another firearm or for storing accessories such as a sling and additional magazines.

any practical way to securely stabilize the rear of the pistol, this was better accuracy than we expected.

Operation was smooth, although the trigger was a bit heavy for my tastes. It's a typical AR trigger fashioned after military specs and, according my scale, had a total pull weight of 6.25 pounds. The trigger pull was smooth with a crisp break.

Once we did our testing for reliability and accuracy, we tried the pistol offhand at 15 vards. After several magazines, we attached a single-point sling to stabilize the pistol while shooting and saw the groups tighten up significantly compared with when we were holding the pistol normally. Anyone who gets a pistol of this type needs to make a point of acquiring such a sling for any serious work.

THE FINAL SHOT

I enjoyed my time with the YHM 5.56 MM Pistol. While it is like most standard ARs. I do enjoy the specialty items. This pistol was reliable from the first round to the last, totaling nearly 300 rounds. The iron sights (optional) were easy to use, but I like having the addition of an optic. This pistol is a compromise between offering most of the AR's attributes while being a little more awkward to handle, especially for those not used to a weapon of this type, but that's easily remedied with the addition of a sling.

That said, this is a great compromise for civilians who don't have access to shortbarreled rifles and can't legally carry or store a loaded rifle while going about their business. YHM's answer to this problem is a wellexecuted design that will be just the ticket if things go sideways in a hurry and a regular carry pistol just isn't enough to end the fight.

Until the laws change, the YHM 5.56MM Pistol is ready to bridge the gap and help you get home safely. ass

GROUP DYNAMIC

WORKING TOGETHER IN A SURVIVAL SITUATION

Story by Charley Hogwood

ou are awakened by a sound that rumbles through the house. In the pre-dawn hour, you climb out of bed and look out the window, only to see that the streetlights are flashing oddly. They then go out completely. A few neighbors step outside with flashlights to see what happened. You throw on the nightclothes you keep ready at the bedside and step outside to hear your neighbors speculating about the situation.

Your initial thought is that this is just another summer blackout, but the rumbling you felt nags at the back of your mind.

As the street begins to fill with sleepy neighbors, you decide it might be wise to turn on your battery-powered radio for the news. You all gather around the faint glow of the radio's LED, while in the distance, sirens wail ever closer. The news is full of rumors of impending doom that ripple fear and panic through your neighbors, but no useful information filters through the airwaves.

Your neighbors turn to you for answers.

You think, "What now?"

You've been thrust into the leadership of a group of people all desperate for answers, direction, hope, and protection.

What now, indeed.



INCREASED RESOURCES

Group survival is very similar to individual survival, but it requires increased resources to support everyone in the group for the duration of the event. To make a group operate more smoothly, it is wise to determine ahead of time how the decisions will be made, who will make them, how the decisions will be communicated to the group, and who will make sure those decisions turn into actions.

However, if you are caught with people with whom you are unfamiliar, it will be important to take stock of who seems to be the leader (probably you) and if following that person is in your best interest. Don't underestimate your ability to make the right choices for your own survival.

When people are thrown together in crisis, you will not necessarily be able to operate very effectively: You might not know their personalities and abilities, so you will need to lessen your expectations regarding getting things accomplished. Emergency-created groups usually only have to survive long enough to get out of immediate danger and home to the family. Decision-making in stressful situations will be made easier when you have essentially preloaded the questions and answers before the event strikes.

There are certain priorities to be addressed in any emergency or disaster event. There will be variables, but knowing the basics will reduce their impact on the group. The following are the priorities you will want to begin with when working through an unclear emergency event.

Overarching priorities in an emergency or severe disruptive event:

- > immediate life safety of all members
- > understanding and accepting the current situation
- > security of people, property, and equipment
- > establishing immediate goals and getting started
- > establishing roles and responsibilities for all members
- > trying to predict what could happen next and how you can reduce the impact to the group
- > managing the changing situation and adapting as necessary
- > providing for the health and safety of the group
- > continuing to work the existing plan or establishing a new plan as needed
- > adapting to the duration of events; adjusting priorities
- > being aware of upcoming shortages and addressing them early
- > being ready to relocate on short notice
- > establishing a routine when possible—but watching for complacency
- > making sure not to shortcut the accepted way of doing things, except in an emergency
- > insisting on regular communication and accountability of members
- > maintaining teamwork and morale

When planning for survival, the same categories apply for the individual, as well as the group, for the short term as well as the long term. The difference will be the methods and equipment needed to support the duration and to support the number of people involved.

Remember to consider all eight areas of survival:

- > food
- > water
- > shelter
- > safety and health
- > security
- > energy
- > communication
- > transportation

PREPARE A PLAN

Not all emergencies are obvious at first, and most people will choose to wait and see what happens next to decide on a course of action. However, there are certain things you can do before such a situation to reduce the fog of uncertainty and also make you more flexible in case things change for the worse.

Luckily, you had the foresight to prepare a plan of priorities and supplies based on where you live and what could go wrong in your area long before this blackout event. As a result, you have reduced your need for outside information. When it becomes obvious that this is not a normal power outage, you locate your "family contingency binder," which has all the critical household documents. From it, you remove the included checklist of things to do in the event of a community emergency. Even though "temporary blackout" isn't specifically on your list of scenarios, most emergencies require similar responses, so it is not too difficult to review your plans for all potentially necessary supplies and skills.

When you initially decided that putting a group together was a good idea, it became obvious that the most important thing you could do is find the right people for your group. They might be the people you entrust to care for your families, so choose wisely. Any shortcuts when picking group friends will come back to haunt you.



"A BENEFIT OF EARLY
PLANNING IS THAT IT
REDUCES THE NUMBER
OF DECISIONS THE GROUP
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WITH ON THE FLY."

When you began planning for your group, the first thing you should have done was determine how decisions would be made. This is often one of the reasons groups fall apart. Without a way to make effective decisions, things cannot get done in an efficient way. It is not a good idea to try to wing it or fight for authority when time is of the essence and danger is clouding your thinking.

WHAT ARE THE THREATS?

The next thing you did was to identify all the likely hazards that could befall you, your family, and your group. It's a good idea to begin locally and then reach out farther geographically. Once you have an idea of what can go wrong, you can begin to prepare plans for reducing the impact on your group. As was mentioned earlier, there are many similarities among disasters and other destructive events.

As you become aware of the dangers to your family or group, try to list them by how likely they are to actually happen. In other words, create a list of priorities and work the list with the most likely threats first. As you create your plans, focus first and foremost on life-saving measures; then, start thinking about the longer term. For example, it won't matter how much food you have stored if you don't survive to eat it.

Returning to the blackout scenario, it is time to get your neighbors together and initiate the emergency plan. Because everyone agrees the situation might get worse due to the increasing smoke and no official guidance from the local government, the group decides it might be wise to prepare to evacuate or bug out, just in case.

In the meantime, a number of decisions need to be made and questions answered:

- > Is everyone accounted for?
- > What is the security situation right now, and what might it evolve into?
- > Because there are no working communication systems, how will we gather our other members together?
- > What will we do if we cannot make contact with the others?
- > What will trigger the decision to evacuate?
- > When specifically will we leave?
- > Do we have somewhere to go?
- > How long might we be gone?
- > Could this situation cause us to never return home?
- > Do we have what we need by way of supplies for a bugout?

SURVIVAL EAM UP OR GO ALONE?

There is a huge ongoing debate among survival enthusiasts regarding whether to stick with a group or head out alone if a survival situation rears its head. There is a romantic notion (thanks to Hollywood) of the lone survivor, the rogue loner, or the singular hero tackling insurmountable odds all by himself.

But what is the best way—going it alone or with a group? Alone, you can move faster over open terrain, but with a group, the extra muscle will help you overcome obstacles. Groups can carry heavier loads; alone, you're limited. With a group, you'll need more supplies, such as food and water, for everyone; alone, you only need enough food and water to take care of yourself. When foraging for supplies, a group can cover a wider area than can one person; one person will expend a lot more energy covering the same ground.



A single person is quieter and can hide easier, leaving a smaller footprint on the trail and less trash/debris behind when leaving an area. On the other hand, more people means more security and less of a need to hide in the first place.

Groups have as many ideas as there are people in it. This can lead to disagreements about plans. On the other hand, with more people in your group, you get a better mix of ideas and solutions, a wider range of expertise, a greater mix of gear, more people to carry supplies and weapons, and more general equipment than a single person would ever be able to handle.

Loneliness can be a killer as much as anything. We need encouragement to motivate us to the next goal and keep up our spirits up when times are tough. In addition, there's no one to take turns on watch—you are vulnerable to attack 24/7.

Is there a good middle ground between a group and a single person? Of course. Consider your family or a group of close relatives. For one, you're probably already the leader, and you probably all get along for the most part.

A six-person group of survivors is optimal in most situations. For instance, one or two people can be used to watch the camp while a four-person foraging group can make a resources run. This strategy can be further broken down into two groups: watchers and gatherers. The two watchers keep an eye on the exit route while the other two gather supplies from an abandoned store, for example. If a threat emerges, there's cover for escape and warning available for everyone else. For someone on their own, danger of capture or attack is much higher.

12.15



STAY OR GO?

Knowing when to leave is as important as being able to leave. We get a lot of questions regarding which is better: bugging out or bugging in? The answer is that neither is better than the other until the situation presents itself.

My recommendation is to be ready to leave, because you can survive anywhere, even at home. But if you can only stay, you are at the mercy of the location. Once you have prepared to leave, you should begin preparing your home to shelter in place.

In this story, let's work with the plan that the group has decided to leave to an alternate location. There is a set location, but it is some distance away. The group has decided it would be wise to all leave at the same time to support each other along the way; it also agreed on the secondary evacuation route, because the first choice seems to head in the direction of the expanding black cloud of smoke.

As the group prepares for evacuation, everyone should be looking at the timing. In some instances, it may be wise to leave as early as possible; in others, you may be driving right into chaos. This is why you should have at least three different evac routes in different directions.

Even if your desired direction is east, you may need to go west initially to circumvent trouble. Part of your decision process should include the method of mobility. For instance, do you have enough fuel to go the long way in a car? If you are on foot, and because you won't be able to carry much water with you, do you have water resupply points identified along the way?

It's important that everyone in the group knows and understands all the possible courses of action. In our blackout scenario, it would be imperative that members knew, in a no-contact situation, whether they were supposed to self-deploy or whether someone would be assigned to retrieve them.

A benefit of early planning is that it reduces the number of decisions the group needs to struggle with on the fly. This, in

Five Leadership Skills to Master

Communication—Understanding how to communicate tasks to people is as important as the tasks, themselves. Keep people well informed when changes happen, and do so in a manner everyone can understand. When in a stressful situation, one of the first things to suffer is one's ability to process new information. You have to make everyone understand what is happening and what they all need to do about it.

Decisiveness—One thing that can ruin a group dynamic in an emergency situation is vacillation—a wavering from one direction or choice to another. Plan for the unexpected, and nothing will surprise you. When you display an inability to make a decision, people will quickly lose faith, not only in you as a leader, but in the whole enterprise, as well. Employ the "Q-CAT" system: Be Quick, Committed, Analytical, and Thoughtful when making decisions.

Team-Building-You didn't pick this group of people you need to work with, but helping them work together will result in higher productivity and better morale. Avoid personal conflicts between individuals by channeling any anger or frustration on tasks that are good for the whole group.

Confidence—Know who you are and what you want, what vour weaknesses are, and how you've compensated for them in a positive way. You don't have to be the best at everything to be a leader; you just have to surround yourself with people who are competent and know how to get them to produce results.

Motivational Skills—High morale is one of the most important mental states a person needs to be in to remain positive, productive, and supportive. Encourage people when they need energy to keep going. Celebrate success, and be quick with praise, even for the smallest of tasks. Never criticize or place blame, and always pitch in first with a task.

turn, keeps the group focused and in control. Fewer decisions mean less potential for conflict with each other. Everyone knows the plan and has something productive to do.

What happens when the group members arrive at the final destination? The group should have already prepared a course of action to occupy, protect, and reside at the location as the situation requires. At this point, the group might not be sure how long it will be at this location, so it would be wise to default to the basic plan of "set up and secure" for the short term.

The next decision to be made is how to get more information about the situation and the immediate surroundings. Although members of the group might already be familiar with the area, something might have changed, or others might be near. A patrol would be a good idea to reveal any new information. This could include making contact with people nearby or setting up a radio to listen for broadcasts.

CHANGING SITUATION?

Let's say the situation changes, and the group, through its amateur radio network, discovers that the situation is worse than originally understood. What if the group must move from short-term survival mode to long-term survival mode? In this case, the group will have to adjust its plans to provide for the immediate needs—with the expectation of transitioning into sustainable survival.

"IN SOME INSTANCES. IT MAY BE **WISE TO LEAVE AS EARLY AS POSSIBLE:** IN OTHERS. YOU MAY BE DRIVING RIGHT INTO CHAOS."

This means that group members will have to realize the bugout supplies will be consumed in short order and that additional supplies will need to be acquired or produced. Keep in mind that the group should try not to exhaust the bugout supplies immediately, because it could be forced to evacuate again and might be on the road for some time before it can settle down somewhere else.

Although the group has decided to stay in this location, something could happen at any time that would necessitate needing to leave in a hurry. If this is the case, decisions will need to be made regarding how to shift the priorities without letting the group's guard down. This could be difficult if manpower is limited. One way to plan for this type of situation is to place supply caches and some resources near the retreat location to get the group started.

THE FUTURE

The best way to facilitate decisions in bad conditions is to try to predict what decisions will need to be made and then plan ahead. By reducing the decisions that need to be made, you will reduce all the potential problems that come with decision-making. You can make any decisions that do come up along the way easier by having a clear understanding of what you are trying to do and what you have to work with. Information is key, and knowing how that information relates to your plan is just as important.

The take-away here is: Be aware of what you are trying to do, and do things that support that goal. Everything else might just be a distraction.

Gear Guide.12.15

The March of Time

12 High-Tech Watches for Any Emergency

Story by Joshua Swanagon

TIME—THE GREAT EQUALIZER. No matter how rich or how poor you are, you get 24 hours a day. No more, no less. You can't buy more time, and you can't save it up for later use.

There is something profoundly comforting about wearing a watch, especially if you are stranded in the backcountry with miles of open territory in front of you or if society is crumbling down around you and there is very little you can do to stop it. The quiet and steady ticking of a wristwatch is a reminder of civilization, of the creativity and ingenuity of man. It is a link to your past and a tether to your future.

With a watch, we have been given the power to harness time in a way we never have before by utilizing each second in a more productive manner and having the knowledge of how much time we have left in the day and how much time we have already spent.

With today's field watches, time is no longer limited to the features of a common wristwatch. They come equipped with thermometers, barometers, and altimeters. They are waterproof, shockproof, and nearly lifeproof. Their batteries can last for years, and there is very little maintenance required besides wiping off the mud from time to time.

A watch is a very personal thing, so the features you want are determined by your own tastes. However, you will want to make sure the watch you choose is constructed solidly, features durable materials (crystal, not glass, etc.), and is water resistant to a minimum of 50 meters (to withstand at least rain and light water wear).



Casio ProTrek

Casio's ProTrek features a compass, altimeter, and barometer, so you are sure to be able to find your way in the field while staying one step ahead of the weather. The ProTrek's tough solar power and atomic timekeeping mean you don't have to worry about your watch dying on you in the field or displaying the incorrect time.

- multi-band atomic timekeeping (U.S., U.K., Germany, Japan, China)
- tough solar power with battery level indicator
- · water-resistant to 100 meters
- low-temperature-resistant (-10C / 14F)
- · altimeter
- · digital compass
- barometer
- thermometer
- various other functions, such as countdown timer, stopwatch, etc.
- full auto calendar (pre-programmed until the year 2099);
 12-/24-hour formats

\$600 Casio.com

MTM SPECIAL OPS Black Predator II

The Black Predator II incorporates chronograph functionality with a sleek, simple, elegant face, keeping the clutter down so you can see what you need to see in an instant. With its solid 316L stainless steel case and band, 200-meter water resistance, and scratch-resistant, anti-reflective sapphire crystal, the Black Predator II can take anything you can throw at it—and more.

- solid 316l stainless steel watch case and band
- Swiss quartz chronograph movement with date window
- · Water-resistant to 200 meters
- · tritium illumination
- scratch-resistant, anti-reflective sapphire crystal
- unidirectional, stainless steel, ratcheting bezel

\$895 Specialopswatch.com





Swiss Army I.N.O.X.

The name says it all: The I.N.O.X. (impact-neutralizing object for the "xtremes") is, indeed, a watch built for the extremes, with no corners cut. But if the name isn't enough to convince you, Victorinox made sure to put the I.N.O.X. through its paces—from dropping it off a three-story building to repeatedly running it over with a 64-ton tank and everything in between. It still ran.

- Swiss-made
- 43mm stainless steel case
- quartz movement (RONDA 715)
- · scratch-resistant, triple-coated, antireflective sapphire crystal
- · water-resistant to 200 meters (20 ATM, 660 feet)
- · luminescent hands and indexes
- · protected, screw-down crown
- · screwed case back
- date calendar
- · end-of-life indicator

\$525 Victorinoxwatches.com

Suunto **Essential Carbon**

With sleek styling that can make its home in any professional environment, the Suunto Essential Carbon provides durability that can withstand hard use in the field—and come out asking for more. The Essential series gives you the tools you need to survive any stay in the field, including a storm alarm, altimeter, barometer, compass, and sunrise/sunset notification.

- altimeter
- barometer
- compass
- · dual time
- · sunrise/sunset
- temperature
- · storm alarm
- · water-resistant to 30 meters/100
- depth meter for snorkeling
- · user-replaceable battery

\$800 Suunto.com



What ls an

The specifications for many field watches today use that big buzz term, "ABC watch." What this means is simply that it has altimeter, barometer, and compass functionality built into the watch and also utilizes built-in sensors. A thermometer is usually included, as well, but you will not be able to get an accurate reading while it is on your wrist due to your body heat. To get an accurate reading, remove the watch and set it down for about 10 minutes. This will give the watch time to register the actual temperature of the surrounding air.

Gear Guide.12.15



Suunto Ambit3 Peak

Along with its impressive altimeter, barometer, and compass features, the Ambit3 Peak adds GPS route navigation and trackback, ensuring that you will never lose your favorite camping spot again. The Ambit3 also gives you Bluetooth connectivity that allows you to receive notifications from your phone directly to your wrist or use your phone as a second watch display.

- 30-hour, rechargeable battery with 5second GPS accuracy (1-minute accuracy: 200 hours)
- · route navigation and trackback
- · compass
- · altitude (FusedAltiTM)
- · weather information
- · heart rate in swimming
- · activity-based recovery time
- speed, pace, and distance
- Bluetooth connectivity

\$500 Suunto.com

Reactor Titan

Perfect for military and law enforcement, the Reactor Titan's tough Nitromid polymer case is built to take a serious beating, and its Never Dark illumination means you will be able to see it in any lighting conditions, 24/7—without fail—by combining the luminosity of Superluminova with the longevity of tritium. The rotating inner and outer bezels allow for advanced timing functions.

- Nitromid™ polymer case with forged
 316L stainless core
- Never Dark illumination
- · inner rotating bezel with tritium tubes
- high-torque Swiss movement with
 10-year power cell
- · durable, accurate quartz movement
- · 200 meters/660 feet depth-tested

\$499.95 Reactorwatch.com





GGarmin Epix

Much like its brother, the Fenix 3, the Epix combines the full features of an ABC watch with the convenience of a GPS on your wrist. Along with many of the lifestyle functions found on the Fenix 3, the Epix is loaded with the ability to read and display topographical maps for the more discerning hiker. With its square, color touchscreen display, the Epix gives a dynamic experience in topo map reading combined with GPS positioning.

- · water-resistant to 50 meters
- altimeter
- barometer
- · compass
- · thermometer
- · GPS with 8GB built-in memory
- · Custom- and topo map-compatible
- Features for running, cycling, swimming, activity tracking, and more
- Bluetooth-compatible with some devices to deliver notifications to your wrist

\$549 Garmin.com

Timex Expedition Rugged Chronograph

The same classic, rugged styling you have come to know with Timex and the functionality of chronograph features make the Expedition Rugged Chronograph a great option when you need a watch you can depend on—without breaking the bank.

- · INDIGLO night light with night mode
- · chronograph measures to 1/2 second
- · date feature
- · case material: brass
- · crystal/lens: mineral glass
- · watch movement: quartz analog
- · water-resistant to 100 meters

\$72 Timex.com



Cadence GARMIN

Garmin Fenix 3

The Garmin Fenix 3 is a true GPS on vour wrist, combined with three tools everybody should always have on them (altimeter, barometer, and compass). With its color screen, the Fenix 3 not only gives you functionality for the field, it also interacts with your smart phone to give you notifications right on your wrist for quick reference. Because it has a rechargeable battery, you never have to worry about buying another onejust charge and go.

- · water-resistant to 100 meters
- altimeter
- barometer
- compass
- thermometer
- GPS with 32MB built-in memory
- · features for running, cycling, swimming, activity tracking, and more
- Bluetooth-compatible with some devices to deliver notifications to your wrist

\$499 Garmin.com

Bertucci A-5P

Built for hard use without a lot of hullabaloo, the Bertucci A-5P is designed to give you a solid field watch that will take what you can dish out. The A-5P includes Swissmade MB-Microtec® Trigalight® tritium to give you reliable readability in any light. Its 100-meter water resistance means you are OK to enter any environment without worry.

- durable U.S.-patented, carbon fiberreinforced, polycarbonate A-5P case
- black ION finish, stainless steel. screw-down case back, crown and band hardware
- hardened, scratch-resistant, mineral glass crystal
- Swiss-made, all-metal quartz movement
- ergonomically offset crown at 4 o'clock
- · 12/24 hour markings with date dial
- · integrated durability certified bandretention lug bars
- · three and a half-year battery life
- · water-resistant to 100 meters

\$379.99



Gear Guide.12.15

Any Watch Is a Compass

With many of the ABC watches on the market today, many people don't realize their watches already have a built-in compass. All watches. Simply point the hour hand toward the sun. Then, going in a counterclockwise direction, find the point directly between the hour hand and 12 o'clock positions. That is north (this only works in the Northern Hemisphere). If you have a digital watch, you can draw the time on a piece of paper or in the dirt.

Luminox Recon Leader Chrono Alarm

With its chronograph functions for splitsecond timing, 25-year luminosity, and map scales designed right into the strap, the Recon Leader Chrono is ready for the field. It also comes equipped with a world time city zones bezel and world color countdown quadrant. Its walking tachymeter allows you keep track of your pace during any hike.

- · Swiss-made
- · always visible: constant glow for up to 25 years in any light condition
- water-resistant to 100 meters, 10 ATM, 330 feet, individually tested
- movement: Ronda 5130.D chronograph alarm, special HH
- · battery/battery life: 395/38 months
- · case: PC carbon-reinforced
- bezel: PC carbon-reinforced, unidirectional turning bezel with world traveler at 12 hours, fitted with yellow LLT, protected by sapphire crystal
- · case back: 316L stainless steel
- crystal sapphire: single anti-reflective coating
- · crown: 316L, steel, IP black

\$795 Luminox.com







MWC Military Watch

The MWC Military Watch uses GTLS (gaseous tritium light sources), so you can be sure that you will be able to see your second and minute hands in low light conditions. The automatic, self-winding movement means you never have to worry about whether your watch is going to keep working when you need it most.

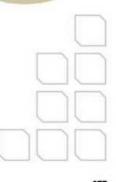
- · water-resistant to 1,000 feet
- GTLS tritium light sources
- · ceramic bezel
- · screw-down crown
- thickness: 15mm
- · crystal diameter: 31mm
- · lug to lug: 52mm
- · 20mm NATO webbing strap

\$509.64 Mwcwatches.com

Battery Use in ABC or GPS Watches

ABC or ABC/GPS watches that are rechargeable tend to drain much faster but can be charged fairly quickly. If you take a small solar charger with you into the field, you can be sure your watch will remain charged for the duration of your trip.





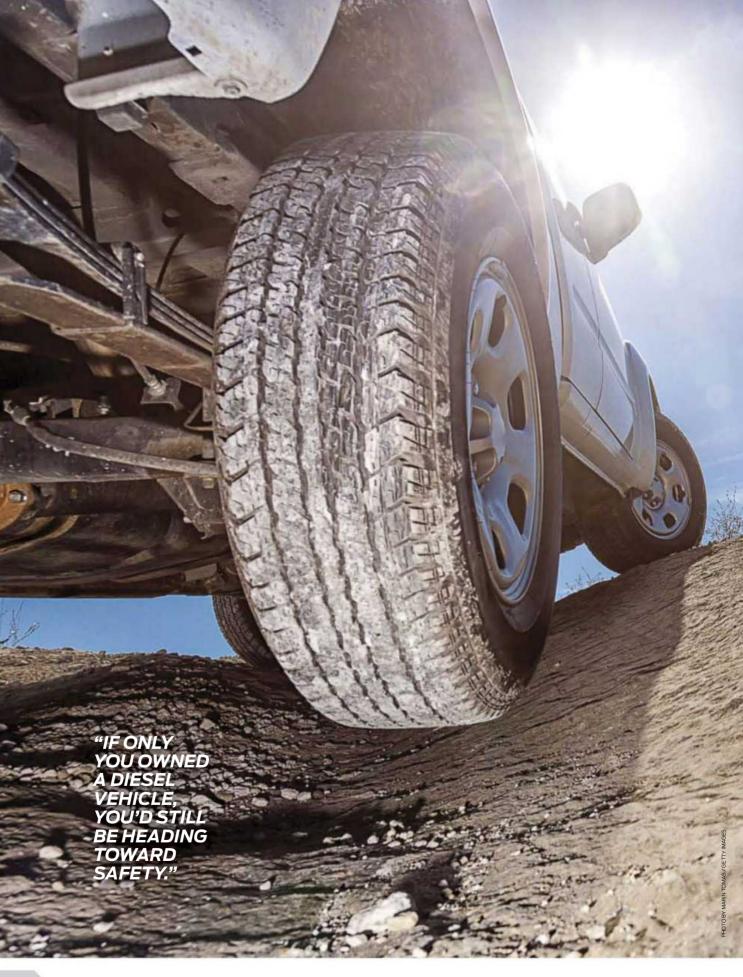
Every Soldier has a story to tell.

The personal recollections of these ordinary men and women who have done extraordinary things for their fellow Soldiers, their Army, and their nation will soon be told at the National Museum of the United States Army.



MUSEUM
UNITED STATES
ARMY

(800) 506-2672 armyhistory.org







" ... A DIESEL VEHICLE GENERALLY HAS A MUCH LONGER RANGE THAN A GAS-POWERED CAR."

RETURN OF THE DIESEL

Diesel cars have long had a bad reputation in the United States, and it's generally a fair rap to say that they've been dirty, underpowered, and no fun to drive. Part of that is because American #2 diesel has been a dumping ground for the gunk and grime left over from the petroleum refining process, but part of that has been the fair market evaluation of previous generations of diesel-powered cars.

The current crop of diesels you can buy from the VW Jetta to the Chevy Cruze to the Ram 1500 EcoDiesel pickup—is a far cry from the diesels your parents bought after the first gas crunch in the 1970s. The new bywords for diesel are "power" and "performance." And, if you're ready to step up to a heavy-duty pickup, any of the "Big Three" automakers (General Motors, Ford, and Chrysler) can give you a 3/4- or 1-ton truck with a diesel engine that can pull an entire city block—with the street still attached.

J.D. Power & Associates has projected that diesel-powered vehicles will rise to 14 percent of total U.S. auto sales by 2017. This means that the availability of diesel vehicles and diesel fuel will continue to rise across the country. That's good news for people looking for an emergency or bugout vehicle with range, reliability, and flexibility.

GET FARTHER AWAY

There are many good reasons to choose diesel for your bugout vehicle. The first—and perhaps. the most important—reason is that a diesel vehicle generally has a much longer range than a gas-powered car. Diesels such as the VW Jetta are rated at 46 mpg on the highway, but any diesel Jetta owner can tell you that you can get up to 60 mpg in real-world circumstances if you're careful. The new Ram 1500 EcoDiesel gets 29 mpg on the highway and advertises a total range of 754 miles on a full tank.

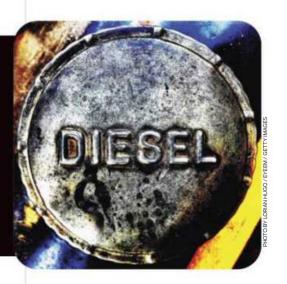
So, combine the excellent fuel economy of any diesel with a largish tank and you've got the ability to get where you're going without stopping; and that, right there, can make all the difference in the world. When you're bugging out and time is of the essence, having enough fuel on board to take you anywhere you need to go is a benefit far beyond the price difference of a diesel when you bought the car. Also, in a bugout situation, you can't rely on the availability of any fuel along your route.

A RELIABLE PERFORMANCE CAR

Diesel engines are every bit as reliable as gasoline-powered engines, in large part because they have no ignition system to go bad. In addition, modern turbo-diesels deliver excellent torque and horsepower, so don't feel you'll be driving around in a slow and dirty penalty box until bugout day. A full-size 3/4-ton pickup with a turbo-diesel engine can out-accelerate many hot rod sport compact cars, and tuners can dial up even more power with a quick software change.

What Is Diesel Fuel?

We all know gasoline is made from refining crude oil, but exactly how oil is refined is a key concept that is often misunderstood. The basic method for refining is to boil the crude oil and then capture the various components of the crude by their boiling points. Heavier oil products can be used to create asphalt and tar. Somewhat lighter distillates produce gear oil, motor oil, and similar products. Moving up the scale, you get diesel/heating oil, kerosene, gasoline, and then various lightweight oils and naphtha, all the way up to petroleum gas—the lightest of all.





)) Dodge's Ram truck brand brought out the 1500 EcoDiesel for the 2014 model year, and the truck was an instant hit. The Cummins turbo-diesel had been a popular choice in Ram ¾- and 1-ton trucks since 1989, but now, for the first time, a diesel engine was available in the light-duty, half-ton chassis.

The EcoDiesel is a 3.0-liter, double overhead camshaft, V6 design, and this engine produces 240 horsepower and a whopping 420 pound-feet of torque. That's mated up to an eight-speed Torqueflite automatic transmission and your choice of two- or four-wheel drive. You get a maximum tow rating of up to 9,600 pounds (depending on your driveline choice and cab configuration), so you can pull just about anything with this diesel, and the bed will carry up to 1,680 pounds of payload.

The Ram EcoDiesel comes with a full four-door quad cab with a 6-foot, 4-inch bed and is approved by the manufacturer to run on B20 biodiesel—making it an even more versatile truck.

The 2015 Ram 1500 HFE with the EcoDiesel engine starts at \$37,200 in the base 4x2 Tradesman trim and at \$37,895 in the 4x2 Express trim. You can also get the truck in Outdoorsman trim with four-wheel drive for \$43,505.





Diesel **By the Numbers**

percentage of refined petroleum that becomes diesel

percentage of diesel used by "on-highway" vehicles

barrels of gasoline used in the United States daily in 2012

percentage of oil imported from other countries

U.S. production of biodiesel in 2013

percent increase in diesel car sales in 2012

number of registered diesel cars in the United States in 2012

cent tax on diesel fuel in Connecticut (highest in the nation)

cent tax on diesel fuel in Alaska (lowest in the nation)

percentage of gas stations in the United States that offer diesel fuel

A SAFER FUEL

Diesel is a much easier fuel to store and carry than gasoline. You can carry 5 or 10 gallons on top of your car without worrying that you have a potential bomb over your head. You can also store your diesel quite effectively at home or at your bugout location. You just need to follow some simple rules for effectiveness and safety.

First, get good containers. Most modern containers are made of plastic, and that's good. Gasoline is supposed to go in red containers, while diesel goes in yellow containers and kerosene in blue containers.

If your needs run to more than a few gallons, you can buy empty drums at farm supply stores. You can get the standard 55-gallon drums or smaller 30-gallon drums quite readily. Make sure your drums are completely dry before filling them, and then, leave them filled and sealed tightly until you plan to use the fuel. If you have a partially filled drum, the air inside will introduce water into your diesel fuel through condensation.

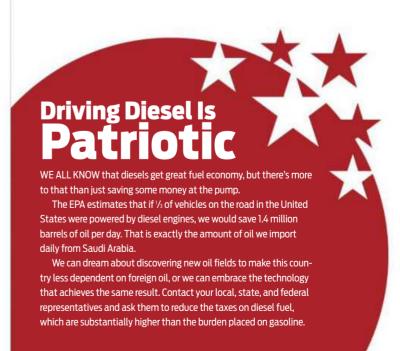
If you're going to store fuel in drums, you need to keep that fuel safe, which means away from your home, your garage, and any sources of heat, sparks, or flame. A metal garden shed at least 50 feet from other structures is a good choice.

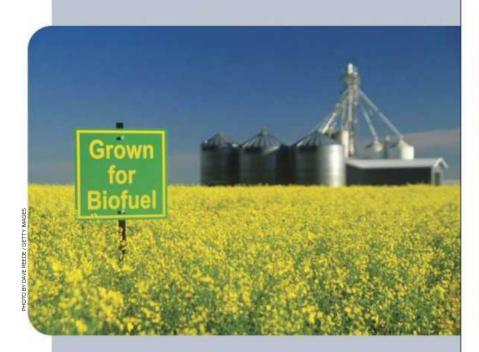
You also need to consider heat from the sun and air as dangers. If you fill your drum or plastic jug in winter, the fuel will expand as ambient temperatures rise, and the drum might burst. You'll want to open it up from time to time and let the fumes out. Opening the drum will allow some moisture in, but that's minimal and unavoidable.

A MULTIPURPOSE FUEL

Standard #2 diesel fuel in America is the same stuff as home heating oil. If you have a few drums sealed and stashed at your bugout location, you can run your heater and your vehicle on the same supply, greatly simplifying your stocking requirements and long-term needs.

You can also purchase electric generators and water heaters that run on diesel fuel and thereby provide your bugout location with all the comforts of home using the same fuel source for heat, transportation, and electricity.





WHAT YOU NEED TO KNOW ABOUT

"Bio-diesel" is a name given to a variety of fuel oils made from renewable plant mass. That's a fancy way of saying that bio-diesel is made from grasses, canola, and other vegetable oils. This is then mixed in some measure with conventionally produced petroleum diesel.

The amount of biologically produced diesel is shown in the fuel grade at the pump. B5 fuel is 5 percent bio-diesel and 95 percent petro-diesel. B20 is 20 percent bio; B50 is 50 percent bio; and B99 is almost all bio-diesel.

Here's the main thing to remember: Commercial bio-diesel can be used in any modern diesel engine

with no changes, as long as the ambient temperature is above 50 degrees Fahrenheit. Below that, the bio-diesel starts to congeal and can clog up your fuel filters. So, keep it to B20 or B5 in the winter; in the summer, you can safely use B99.

Note that bio-diesel is not the same as running your engine on vegetable oil or used French fry oil. That requires substantial changes to your engine and fuel-injection systems. Commercial bio-diesel sold from a pump is the way you want to go.

Best of all, bio-diesel is produced in the United States from renewable resources, so you can feel good about where your money is going.

THE BOTTOM LINE

At the end of the day, you need to rely on your bugout vehicle, and you need to choose a vehicle you can afford to buy and drive until bugout day. As you make your plans and decisions, it's wise to consider standardizing on diesel as your fuel-ofchoice. But be sure to make certain that diesel will work in your daily life—where is the nearest diesel station to your home and work? How much does diesel cost in your town, and does the price fluctuate during the winter and summer? Perhaps most of all, will you enjoy driving a diesel vehicle? If the answers are acceptable and fit into your plans and needs, a diesel-powered bugout vehicle could be the right choice for you.



Fuel Your Survival

HOW TO MAKE BIODIESEL—A STEP-BY-STEP PROCESS

Story and Photography by Larry Schwartz

WHEN THE GRID GOES DOWN, LIFE CHANGES.

One of the key areas it pays to wire is alternative fuels, such as biodiesel, because it can be used as fuel in a diesel engine and as a primary source of fuel for generators at a remote bugout location or refuge. It also has a number of other uses, including as fuel for your oil-fired heaters and lamps. Not only does biodiesel have multiple uses, it is also one of the easier types of alternative fuels to

make because of the simple process involved and the ready availability of the source materials. Here's how to do it.

SIX SIMPLE STEPS

Making biodiesel is a simple process. However, it is one that requires precise measurements and caution in handling the materials used to make this alternative fuel.

Step One: Assemble All Your **Materials**

You will need the following materials to make your biodiesel, and you should have them all on hand and ready to use when you begin. You don't want to have to step away to get your measuring spoons or find propane for your stove.

- > waste vegetable oil (WVO) or pure vegetable oil
- > lye
- > methanol (methyl alcohol)
- > funnel
- > measuring spoons
- > measuring cup
- > 1-quart glass container
- > half-gallon (2-liter) clear plastic container, such as a 2-liter soda

- > protective rubber gloves
- > protective evewear
- > protective apron
- > heater to warm your waste or pure vegetable oil, such as a propane stove or electric burner
- > metal pot to heat your waste or pure vegetable oil

Note: Anything that comes in contact with the lye must be a nonreactive vessel. A non-reactive vessel is one that does not oxidize or release metal ions when exposed to something very acidic (such as lemon juice or tomatoes) or very basic (such as lye). For this reason, you should avoid vessels made from aluminum, copper, or cast iron. Your best bet is to use something made from glass, plastic, or ceramic.

This procedure requires good ventilation, so doing it in a wellventilated room—or preferably outside—is necessary. For this article, we are doing it outside.

Biodiesel Uses

Besides using biodiesel as fuel in a diesel engine, there are a number of other things you can use

- fuel for an oil-fired
- burning it instead of kerosene in lamps, lanterns, and as torches
- as fuel in multi-fuel camping stoves
- a solvent for cleaning any petroleum-based materials, such as paint or oils, from your hands or equipment

Biodiesel

One of the first alternative fuel engines was created by Rudolf Diesel, the German scientist for whom diesel fuel and diesel engines are named. Diesel saw the usefulness of non-petroleum-based oils as sources of power and foresaw today's biofuel marketplace.

When asked about its usefulness, he said, "The use of

vegetable oils for engine fuels may seem insignificant today, but such oils may become, in the course of time, as important as petroleum."

In 1898, he was granted a U.S. patent for a diesel engine he designed for farmers to use so they could grow their own fuel in the form of peanuts and peanut oil.





The materials you need are simple: vegetable oil, lye, methanol, the containers to measure and mix them in, and safety equipment.

Step Two: Heat the WVO

Pour 4 cups of WVO into a metal pot or saucepan and heat it to between 130 and 140 degrees Fahrenheit—any hotter than this, and you run the risk of melting your mixing container.

Step Three: Make the Sodium Methoxide

While the WVO is heating, pour 1 cup (or 250 ml) of methanol (methyl alcohol), followed by 1½ teaspoons of lye (sodium hydroxide), into a glass container that uses a non-reactive lid. Place this lid on the glass container and shake or swirl the container to thoroughly mix the methanol and lye. Water and other contaminants might settle to the bottom of your heating vessel as you heat the WVO.

Step Four: Combine the Heated WVO and the Sodium Methoxide

Pour the heated WVO into a half-gallon (2-liter) plastic bottle. Take care to ensure that no water or other contaminants are poured into your mixing container. Then, add the methanol/lye mixture (sodium methoxide). Do this slowly to avoid splattering or spilling. Use a funnel for pouring each of these liquids into the half-gallon container.

Place the lid on the container and shake it vigorously for 20 to 30 seconds to fully mix the two liquids. Then, set the bottle down and wait.

Step Five: Transesterification (Separating the Biodiesel From the Glycerin)

Through a process called "transesterification," the WVO and sodium methoxide mixture will

It Pays to Be Safe

As already mentioned, safety should be one of your main concerns when making biodiesel-especially if you are going to make it on a large scale with a dedicated biodiesel processor. You are using chemicals (lye being one of them) that are highly corrosive, and they can burn and blind you. Because water, oil, and heat are part of the process, the potential is high for splashes of hot or caustic liquids. For these reasons, eve protection and protective clothing, such as rubber gloves and aprons, should be used. Fumes from the materials and the process, itself, are also a possibility, so working in a wellventilated room or area is also paramount.









1. Heat your vegetable oil to between 130 and 140 degrees Fahrenheit to facilitate the chemical reaction when you mix the oil with the methanol and lye.

2. Mix the lye and the methanol in a glass container; these chemicals will be the catalysts that separate the glycerin and the biodiesel from your heated vegetable oil. 3. Add the methanol/lye mixture to the heated vegetable oil using the same pot you heated the oil in.

4. Pour the mixture into a clear plastic container and set it aside to let the chemical process do its work. After a day or two, all the glycerin will settle to the bottom of the bottle, and you can pour off the biodiesel.

separate into two liquids-biodiesel and glycerin. The glycerin will be a thin laver of darker liquid that, due to its greater density, will sink to the bottom of the container. The lighter biodiesel will remain on top. The separation should be evident within 30 to 45 minutes, but it will take two to three days for all the glycerin to separate from the biodiesel. So, set the container somewhere it will not be disturbed or knocked over and let chemistry do its thing.

Step Six: Remove the Glycerin

Depending on the purity of your WVO, the biodiesel produced will be approximately 85 to 100 percent of the amount of WVO.

The next step is to remove the glycerin from the container. If you left the container with the opening up so the glycerin settles to the bottom, you can pour off the biodiesel, leaving some of it in the container. Alternatively, if you store the container with the opening down, the glycerin will settle next to the opening, and you can slowly loosen the lid until the darker layer of glycerin starts to flow out.

Once clear liquid (biodiesel) starts to flow out, you can close the lid. The glycerin can be added to your compost to help with decomposition or it can be used to make soap.

WHERE TO BUY BIODIESEL KITS AND EQUIPMENT

The following websites provide information about how to make or where to buy biodiesel kits and production facilities:

www.instructables.com/id/Make-Your-Own-Biodiesel-Processor

www.b100supply.com

www.homebiodieselkits.com

www.biodieselsolutions.com

www.diyfuel.com

www.officialbiodiesel.com

www.homebiodieselkits.com

THE SCIENCE BEHIND BIODIESEL

Biodiesel in all its forms starts with animal fat or vegetable oil, which are tri-glycerides composed of glycerin and fatty acids. The addition of lye (sodium hydroxide) to the fat or oil breaks the fatty acids from the molecules' glycerin "backbone." Adding methanol (methyl alcohol) to the mix gives the free fatty acids something to bond to.

The new molecule made of the fatty acids and methanol is called "biodiesel." It is a simple process when using pure ingredients, but it can get more complicated if your source materials are contaminated (for example, if you are using old cooking oil or if there is water mixed in with the oil). These are not insurmountable obstacles; they just require some additional steps to "clean" the oil.

TRANSFORMATION COMPLETE

You now know the basics of how to transform vegetable oil into biodiesel. Do some more reading on the Internet about other methods that use different chemicals: also research how to build or where to buy a biodiesel production system so you can make this fuel in larger quantities and at a lower cost. (See this page for some suggested "where to" websites.)

Biodiesel can be a useful resource for you and your family, and it can also be guite a valuable resource that you can trade during bleaker times, when you need something you don't have or can't do yourself.

Larry Schwartz is an experienced outdoorsman, prepper, hunter, shooter, and instructor who enjoys passing on his love and knowledge of the outdoors, the shooting sports, and how to "be prepared" through his writing and workshops on a wide variety of topics. He is a longtime regular contributor to several of Engaged Media's publications.

WHERE TO LEARN MORE

The following websites and organizations are excellent sources for information about making biodiesel in larger amounts, as well as how to "clean" the impurities from it:

www.hindieselcommunity.org www.biodiesel.infopop.cc/eve www.iournevtoforever.org







EIGHT MUST-HAVE KNIFE STYLES FOR THE SURVIVALIST

Story by Garrett Lucas

OME OF THE MOST CONTENTIOUS DEBATES OCCUR WHEN PEOPLE START ASKING QUESTIONS THAT BEGIN WITH, "WHAT ONE GUN ... " OR "WHAT ONE KNIFE ... " AND SO ON.

Those kinds of questions get asked, no matter the type of avocation one might pursue, whether it's about fishing rods or the best all-around lens for photography.

For this article, we open things up a bit and discuss not one style—but the top eight styles—of knives for survivalists to have on hand if and when things go sideways in the world.

However, a couple of complications arise when we consider that this topic deals with items on which your life may depend, along with the fact that there are a lot of opinions out there that accompany the vast array of available knife styles. But the best answer to the question regarding the best styles of knives to have at the ready will result naturally from looking at our daily lives.



Yes—I'm going from one extreme to the other. A machete is an extremely versatile tool for

easily clearing vegetation, doing light chopping

on saplings, and cutting away overhead vines-

used to build a shelter or to dispatch a chicken

just about all cutting and chopping needs and

is a definite must-have blade for a survivalist of

In many countries, the machete is used for

whether you're at home clearing out some

light brush or bugging out on foot. It can be

for Sunday dinner.

any kind.

After I did my research about hunting knives, it was clear that there doesn't seem to be much consensus as to what constitutes this knife type. Some people are fans of drop-point blades and trailing-point blades. Others like longer blades in the 5- to 6-inch range, and yet other people prefer shorter blades that are more maneuverable. Some people use folding knives for their cleaning and dressing chores.

Fat-belly knives are popular for skinning, and narrow, thin blades are appreciated for their ability to work around bone.

works for you and allows you to efficiently skin and dress game properly for consumption. About the only real consensus I could find was that most people agreed hunting knives should be easy to sharpen in the field, and the handle should be "grippy" so it won't slip when it's wet

with blood from a game animal.

Essentially, a hunting knife is whatever knife



SURVIVAL KNIVES

Much like hunting knives, almost any decent fixed-blade knife could be called a survival knife ... almost. A lot of people have strong opinions in this area, but for the sake of this article, I'll share a few thoughts about what characteristics I think a survival knife should have.

First, for a one-knife solution, I'm going to want something at least 3/16-inch thick but would probably prefer 1/4 inch. Yes, ideally, knives should only be used for cutting, but in a true disaster situation, your knife might be the only tool you have, and you don't know what you'll need to use it for. Consequently, I would rather have something robust that can be used to cut, chop, hack, or pry-just in case.

Second, I would want a drop-point or slight clip-point profile so it can be used as a hunting knife and also serve as an effective penetrator for defensive work. I would also want a textured, no-slip grip area that's large enough to provide control for different tasks and still be manageable in wet conditions.

Finally, I would want one with a blade no shorter than 6 inches so it can be used for chopping and processing firewood. Off the top of my head, a couple of knives that fit this bill are the ESEE-6 and the Chris Reeve Pacific.

The downfall for my survival knife preference is that its size makes it likely you won't have it on you if an emergency occurs while you're outside your home. Wearing it around all the time might

tend to spook the natives, and it's not very practical. However, there's nothing preventing you from having such a tool where you live, in case you have the opportunity to plan ahead and can select that tool to go with you when you bug out or leave the house for a while.

BUSHCRAFT KNIVES

It seems that just about every company has come out with its own version of a bushcraft knife in the past five years. Bushcraft has recently been a very popular topic among knifeowning outdoors enthusiasts. The definition of "bushcraft" can be quite elaborate, but suffice it to say, it is basically the ability to work with what nature provides in order to stay alive in the outdoors.

The one thing that nature has plenty of is wood, and you can do just about anything with it you want: You can make a fire or tools (such as utensils or weapons); you can use what's around you to make traps and snares; or just carve chess pieces to pass the time. Some of these tasks entail precision work, so your knife must be very sharp and have a comfortable handle to allow for extended periods of use when carving or shaping wood.

Bushcraft knife designs that have been around for hundreds of years are still popular with the purists, but even modern bushcraft

A. One of the author's first hunting knives was the Cold Steel Master Hunter in Carbon V steel. It has performed so well that he added a new version in San Mai III to his collection. B. Although it's not really a fighting knife, this 20-plus-year-old Cold Steel push dagger is an excellent defensive tool that's easily concealed for a surprise response against an aggressor or to use as a last-resort weapon when all else is gone. C. The Charles May custom knife in this picture is called The Stump. It uses D2 steel and has an excellent profile for a hunting knife, with a drop point and a rounded belly. The Micarta handle offers a secure grip, even when the handle is wet. D. A fine example of a true multi-purpose knife is the Chris Reeve Pacific. Its profile qualifies it as both a tactical and a survival knife. It can also be used as a hunting knife or for basic bushcraft tasks.



E. The Marttiini Rapala fillet knife has probably been the bestselling fillet knife over the last 50 years and is a traditional and very efficient design. The author was lucky that a family member gave him this knife. It's at least 30 years old and still has years of life left in it. F. The Captain Jack seen in this photo is a beautifully made custom piece in D2 that features desert ironwood grips and can serve several purposes. It has a bit of a trailing point, making it a nice option for a hunting knife. It will also work as a utility or eating knife and can be pressed into service as a defensive tool. as well. G. While this next-generation Ka-Bar can be used for basic cutting tasks and some other jobs, it's not an ideal outdoors choice. Because of its sharpened swedge, which enhances penetration and is for use in reverse cuts, this knife's true calling is as a combat knife. H. A modern example of a bushcraft knife is the Benchmade 162 designed by Shane Sibert, Although it has traditional characteristics, such as a full, comfortable handle and a Scandi-grind blade, it uses high-tech materials (S30V steel and G-10) for its construction.

emergency scenario, having one could be the difference between life and death.

Aside from being a popular choice for hunters and as a go-to tool for everyday use, in a SHTF situation, your pocket knife may have to serve as a backup for your primary blade if it becomes lost or damaged.

For general, everyday use, just about any quality pocket knife will do. However, when times get rough, this might no longer be the case. You'll want the best tool you can possibly have. Pocket knives that are more robust, have better lock work and materials, and require less maintenance will become an essential part of your daily carry, so don't cut corners when selecting them.

I. A popular bushcraft-style knife is the Finnish Puukko, of

FILLET KNIVES

There is a multitude of survival fishing kits and other tools (such as gill nets and speed hooks) to help vou catch vour dinner, However, I haven't found many discussions on knife forums or survival/prepper boards about fillet knives. I guess they don't have a lot of "sex appeal." Nevertheless, they are vital tools for cleaning your catch after you've put all the kits and gear away.

I'll admit that I'm no real fisherman, but I've caught my share of fish using various methods and, without really trying, I've assembled a small collection of fillet knives based on the recommendations of others. Almost all far exceed my needs. For instance, I have a couple of Dexter Russell fillet knives, along with a 30year-old Marttiini Rapala fillet knife that still does an excellent job. The trick for this category is to have at least a couple of different sizes.

Work with the fillet knives ahead of time to ensure they're the right selections for you. Most folks don't fish, but there might be a time when they'll have to—and that would be exactly the wrong time to figure out what knives they need and how to use them.

TACTICAL/DEFENSIVE KNIVES

Make no mistake: In a world gone bad, the average person isn't going to bust out any major knife-fighting moves. Nevertheless, having a knife that's capable of acting as a lastresort defensive tool is worth the time and effort to procure. In fact, certain products from the hunting knives and survival knives categories will work quite nicely. For example, the Chris Reeve Pacific would make an excellent survival knife while serving double duty as a defensive weapon.

Trained experts can inflict terrible damage with smaller, more specialized blades, but the average person doesn't have that skill set, so go with what's comfortable and doesn't require extensive training in various techniques. In my opinion, a good choice would be a knife with a long enough cutting edge to make substantial slashing cuts and/or have a point profile that facilitates effective penetration.



"THERE'S A MILITARY
AXIOM THAT BASICALLY
STATES, 'TWO IS ONE, AND
ONE IS NONE.' THAT IS,
ALWAYS HAVE A BACKUP
[KNIFE]—OR FIVE."

Products to Preserve Blades

mineral oil Ballistol® Tuf-Glide Spray™ Tuf-Cloth™ 3-IN-ONE® oil

Knife-Sharpeners

The down side of such a knife, however, is its size. Some people prefer something a bit shorter for ease of carry/use. I would caution the user to practice with whatever knife they choose so they are comfortable with its handling characteristics and to make sure it performs as expected. In some instances, a smaller knife can be effective, because it can be more easily concealed and brought to bear in a surprise attack, but it might not be long enough to do real damage. It's kind of like defensive shooting, where shot placement is everything.

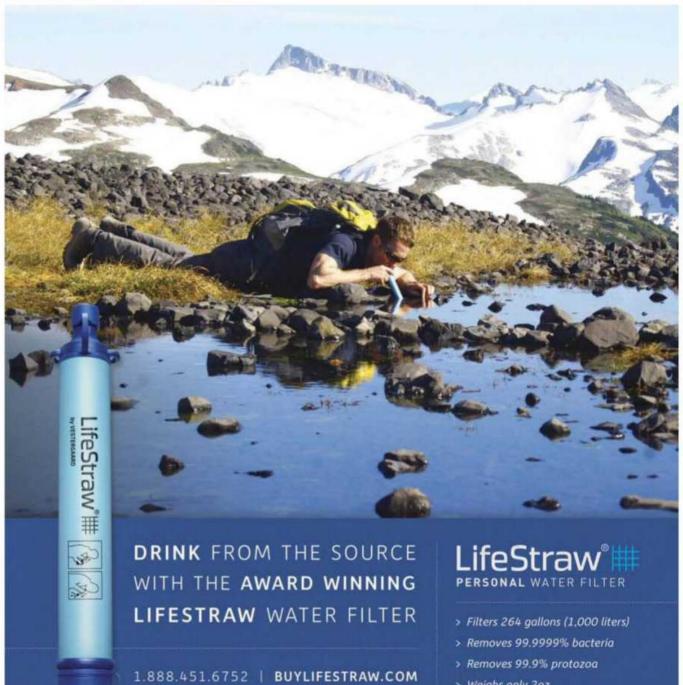
WORDS TO THE WISE

There's a military axiom that basically states, "Two is one, and one is none." That is, always have a backup—or five. Tools break, including knives. It's always prudent to have multiple backups. If budget is an issue, purchase knives that will be functional for two or three different types of tasks.

The categories discussed here should not be considered "scripture" regarding the best styles of knives, because everyone has their own opinion and experience. However, the areas we've covered are good starting points, especially for those who don't own an assortment of blades that can fulfill various needs if they had to live off the grid.

That's the best I can offer; the rest is up to you. However, the sooner you get started finding your knives, the sooner you'll have them on hand—if and when the time comes to use them.

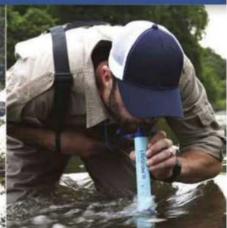
M. Machetes, common tools used around the world, should be included in every survivalist's collection. For their size, they are light and offer a longer reach to clear vines and brush. Machetes can also be used for light chopping and food preparation and are versatile for use in camp or on the trail. N. KA-BAR's Becker Knife and Tool line has quite a large following-and for good reason. KA-BAR's knives, such as this recently introduced BK39. have proven to be reliable tools for the outdoors. This knife's 9inch blade makes it an excellent tool for chopping, processing firewood, and other camp chores. O. Benchmade's Nakamura Axis is an example of a robust folding knife that is up to the task of being used in extreme circumstances. The Axis lock design is arguably one of the best on the market, and the CPM S90V steel blade is a late-generation steel that's extremely tough and corrosion-resistant and has excellent edge retention.



> Weighs only 2oz.







ASHARPER KNIFE EDGE

HOW TO FIELD-SHARPEN YOUR KNIFE IN AN EMERGENCY

Story and Photography by **Kevin Estela**



YOU ARRIVE IN CAMP and begin using your blade. It is late and, as a result of both the darkness and exhaustion, your hand slips while cutting—and you damage the edge. Worst of all, you realize you did not pack any sharpening provisions, and you anticipate using your blade often while you're out.

You have few options: Pack up and go home; keep using your knife, potentially further damaging the edge and making your work harder; or restore your edge by utilizing nature's resources.

Nature, after all, has all you need to keep your blade in working order. From stock removal to honing and polishing, you can generally find what you need in creek beds and the remnants of campsites to sharpen your blade in an emergency situation.

STOCK REMOVAL

Most people assume all you need to do to sharpen a knife is find a river rock. There is more to it than this. Rocks found in the center of the river are generally the smoothest, because water runs over them most often. As you look from the center of the river out, the rocks will become grittier as a result of spending some time underwater and some time pocked by exposure to the air and elements.

Start with a rock that has an aggressive texture (think concrete) and move to progressively smoother rocks. The coarser rocks should make it easy to remove rolled steel. As you refine the scratches on the steel, check to make sure the edge is still uniform. Run the blade in a circular pattern





on one side until you see the wire (a thin layer of steel removed at the edge) form. Flip the blade over to the other side and repeat the process until you see it again. Alternate your passes on the stone, one side to the next, until it has a consistent grind.

If river stones are unavailable, smooth rocks can be cracked open to expose the texture inside. Drop a larger rock onto another over a rock surface. These rocks can be rubbed against each other to change the amount of grit desired. If nothing else is available, sand can be embedded in a wet log, creating a large sharpening strop.

HONING

Honing is the process of realigning the carbides at the edge of a blade (the wire) to create a noticeably sharper edge. Honing doesn't remove material, but it is an important step in the sharpening process. Professional chefs use a steel to do this prior to carving.

Without an available steel, the outdoorsman can use broken glass to hone a blade. Glass is hard, but brittle, and when a steel blade is drawn across it, it acts like a honing steel. This method works well in non-emergency situations, too. Alternatively, a coffee mug, the edge of a car window, the rim of the inside of a toilet tank lid, or a porcelain rod will also accomplish this.

If glass is not available, the outdoorsman can use the inside unfinished section of a leather belt to strop the blade. The buckle can be passed over a log and the tail end can be passed through, creating a hitch. The slack is tightened, and the blade is positioned on the strop with the flat lying against it.

The spine is raised off the belt about the same thickness of the tang. The blade is drawn, spine first, over the leather belt in the same manner a barber would strop a straight

razor. The amount of pressure should be about the same as one would use when shaving with a safety razor. It is important not to roll the edge at the end of the stroppingmotion; instead, trail off the belt. Also, stropping is best accomplished when the belt is placed perfectly flat on a surface.

POLISHING

A polished and clean blade will perform better than a dirty one. The flats of the blade can be polished using hardwood charcoal from campfire remnants. Used dry or with just enough water to make a slight slurry, the hardwood charcoal is not as hard as the steel and won't damage the blade.

Sand can also be used as an abrasive for stubborn substances on the blade—but at the expense of leaving some scratches behind.

Should a more subdued finish be desired after honing, a patina can be forced onto a carbon steel blade by exposing the steel to the natural liquids found inside trees that contain sugars. Once you return home, that patina can be forced even more by inserting the knife into a potato overnight, coating it in mustard, or submerging it in vinegar.

KNIFE-SHARPENING GEAR GUIDE



Gossman **Knives GST**

- · modern take on a traditional sharpening steel; made from D2 steel (63 RC)
- · chiseled tip doubles as wood or pelvic bone splitter
- semi-rounded edge hones blade, flats finished to 36 grit cut sharpen
- · available in 6x1 inches (\$60); or 4.5x34 inches (\$40)

\$60/\$40 Gossmanknives.com



Falkniven

DC4

- · diamond stone for sharpening the toughest steels
- · ceramic stone for polishing
- · 4 inches long; also available in 3 inches (DC3)
- · includes embossed leather pouch

\$29.89 Falkniven.com



Spyderco

Sharpmaker

- · can be used to sharpen plain and serrated blades
- · features preset angles for users preferring set bevel degrees
- · sturdy tabletop design with solid base

\$104.95 Spyderco.com



Dan's Whetstone

EZ Hone

- · four different Arkansas stones (coarse, medium, fine, extra-fine)
- · comes with honing oil
- · compact for carry into the field
- sturdy construction

Prices start at \$20.68 Danswhetstone.com

LONG-TERM FOOD STORAGE

CRITICALLY IMPORTANT AND INCREDIBLY EASY

Story by Jeff Zurschmeide

Fear of hunger runs deep in the human psyche.

Perhaps it's a long-term genetic memory, because throughout most of human history, food was often scarce, and starvation alternated with abundance through the seasons of the year and the cycles of local climates.

This is why food storage was among the first skills humans learned when they abandoned the hunter-gatherer ways in favor of settled living. If they could keep some food around for the winter, they vastly increased their chances of seeing another spring. Food storage allowed humans to come together to create villages, then cities and kingdoms. Food storage also allowed—and required—people to develop specialized skills.

If you think it through, our whole civilization is based on food storage. Every ancient civilization was built on a surplus of food: Corn was the basic food of the Americas, wheat for the Near East, and rice for the Asian civilizations.

In the modern world, things are no different. Creating your own long-term food supply is one of the easiest things you can do to be prepared to handle anything life throws at you. You can start today, you can do it on any kind of budget, and you will almost certainly improve your diet in the process.



12.15





HOW TO START

You can start your food storage program at any time—and start small in any space you have available. It's just a bag of rice or a few extra cans of beans or vegetables. Anyone can do this, and it's easy to be smart about it.

Simply designate a space to store your food. The space can be as simple as a cardboard box. Over time, you can expand that into an organized pantry with secure storage for bulk foods. To start filling your storage, just plan on tossing a few extra cans into your shopping cart as part of your weekly routine. Chances are good you won't even notice the difference on your grocery bill.

TIP: Buy a pack of permanent markers and make a habit of noting the day you bought every item, Write it on the top of the can or the side of the bag or box.

Many modern foods store really well and, not coincidentally, these foods form the basis of almost every cuisine worldwide. We've

Factors Impacting Food Availability

1

Food storage is not necessarily about major disruptive events

> 2 Noatho

Weather

Temporary shortage

4

Unemployment

5

Helping others in need

added the ability to store canned and frozen food, and that offers you a more varied and attractive set of foods to keep in your larder.

CYCLING THROUGH YOUR STORES

From the beginning, you need to understand you are not buying a stash of food that you will box up and forget about. You need to cycle through the food you buy; but once your stores are full, this process won't cost you anything. All you need to do is eat from the oldest of your stored foods and replace what you use with new food from the market. As a result, your stock will remain complete and fresh at no additional cost to you. The rule is, "First in, first out."

In general, you want to cycle through your dried foods annually. Many products will keep far longer if they remain dry, but a year is a good cycle time. When your products reach one year of age, move them from your storage area into your kitchen or ready

pantry for use and replace those products in your long-term storage.

You can use a calendar or a spreadsheet to keep track of your food; and if you marked the cans or bags, that makes it much easier to see at a glance that you're using up the oldest foods first.

DRY STORAGE

The first stored foods were grains and beans. These foods were stored dry-and that's still the key. Farmers have extensive procedures to safely silo their grain, but for our purposes, you're going to buy your food already dry and prepared for storage.

Note: Don't take grain, beans, peas, or similar foods out of their packaging. Multi-layer paper or cloth bags are designed to keep your dry foods dry. If you buy in bulk, you can put your dry foods into clean paper or heavy-duty ziptop bags.

The next challenge is keeping your food dry—and this can be harder than it looks, especially if you don't have a storage space inside your home. Garages are a typical loca-

tion for food storage, and dampness can seep in and ruin your stores in just minutes. Insects and rodents are also a threat.

If you plan to store bulk grains, legumes, or beans, it's worthwhile to invest in clean, metal trash cans with lids. Double-bag your food stores, place them in the metal cans, and firmly secure the lids to the cans. This will keep rats, mice, and most insects out of your stores. Smaller amounts up to 10 pounds or so can be safely stored in sealed plastic containers available at any store.

You can also store fruits, vegetables, and meats by drying them. Dry foods are less susceptible to molds and yeasts and other microorganisms that cause spoilage.

Invest in a food dehydration appliance. You can make dried foods with an ordinary kitchen oven, but it takes longer, and the results are less reliable. A food dryer keeps air flowing over the foods while heating them to about 140 degrees until they are dehydrated.

Dried meats are a special case and can be subject to the growth of salmonella or E. coli bacteria. Take special care if



you plan to make beef or other types of jerky, and consider canning or freezing as an alternative plan.

TIP: Honey will store indefinitely, but often crystallizes in storage. You can revive honey by placing the jar in a pan of hot water and stirring.

CANNING AND BLANCHING

Two techniques our grandparents used to store food were canning and blanching, and these can be used to greatly improve your food storage program today. Without offering an instructional manual on canning in this article, the process basically involves sealing cooked food while hot to kill all bacteria that might spoil the food. The canned food can then be stored at room temperature.

Canning supplies, including the large kettles needed to hold boiling water, can be purchased at many large grocery or farm supply stores. Large supplies of canning jars are often available at extremely low prices at garage sales, rummage sales, and on craigslist. Fresh lids are available at any grocery store.

With practice, meats, vegetables, and fruits can be readily canned and stored for several years. Jams and jellies, pickles, and other homemade foods lend themselves to canning (which can become a favorite home hobby). As an extra benefit, canning jars are reusable year after year.

Blanching is a related technique that works best in combination with freezing. Blanching is also known as "parboiling" and involves briefly submerging the food (usually

PRESERVATION THROUGH **FERMENTATION**

>> Historically speaking, beer and wine were much more than happy accidents-they were important means of preserving food value.

By allowing grape juice to ferment, it can be stored and kept potable far longer than the fresh fruit would allow. In addition to its lubricious properties. wine is a good store of sugar calories. (That may not sound like a benefit to us, but we live in an era of overabundant calories.)

In the case of grains, when you have more than you can readily store and keep fresh, making beer is an excellent way to preserve the carbohydrates and calories. To borrow an old marketing slogan, "It tastes great, and it's filling."

If you ever needed a good reason to get into home brewing and winemaking, here it is. (You're welcome!)

How to Manage Your Food Storage System

When you have invested in a long-term food supply, it's not something you buy once and then forget about until you need it. Even long-term, shelf-stable foods have an expiration date, and they will go bad eventually.

You'll need to manage your food stores, and the best way to do that is with a dedicated calendar or any of the plentiful online tools that are designed to help you track your inventory, as well as when to rotate various foods through your kitchen so your stock stays fresh.

Here are some free tools you can download: >> foodstoragemadeeasy.net/helpful-tools >> prepared-housewives.com/food-storage-inventory-sheets-lists

The tools available online tend to be spreadsheets and other computer-based record-keeping and reminders. If you want something that will survive intact when your computer is down, your tool can be as simple as a free calendar from the hardware or auto parts store.

Simply note when you bought any given supplies and log their "best-by" dates on the calendar. You can decide how close you want to get to those dates before you rotate that food out of storage and into your meal plans.

Just remember to get a new food calendar every year and transfer your notes onto it. Alternatively, just print out calendar sheets for as many years in advance as you need. These are free online, too (www.calendarlabs.com/blank-calendar.php).

vegetables) in boiling water, which begins the cooking process. You then remove the food from the hot water, plunge it into cold water to arrest the changes, and then quickly bag and freeze the food. This preserves the fresh nature of the food and also makes the eventual cooking easier.

TIP: Blanched tomatoes come right out of their skins and make excellent soups and sauces.



When you get to a year's worth of extra food in storage, you'll notice that it takes up quite a bit of space. This is the point at which you might want to build some dedicated storage for your project. The usual space for this is the garage—but it can be anywhere, even a rented storage unit.



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Your Food **Storage** Library

There are many great books on homesteading and food storage that will provide simple, step-by-step instructions on how to can, dry, freeze, and otherwise prepare your food for longterm storage. Here are a few well-regarded favorites:

Putting Food By

Janet Greene, Ruth Hertzberg, Beatrice Vaughan ISBN-13: 978-0452268999

The Backvard Homestead: Produce all the food you need on just a quarter acre!

Carleen Madigan ISBN-13: 978-1603421386

Food Storage for Self-Sufficiency and Survival: The Essential Guide for Family Preparedness

Angela Paskett ISBN-13: 978-1440333538 Here's what you need to accomplish:

- > The space needs to be dry to avoid mold
- > You want to keep the storage area reasonably constant in temperature, especially with home-canned foods.
- > You must keep your food safe from rodents and other pests.
- > The space should be conveniently located so you can access it without difficulty and secure it from the threat of plunder.

Obviously, an unsealso increases your awareness of what cured tin shed in the backyou're eating and helps you connect vard meets none of these with traditional methods of requirements, while a dedicated pantry in your home meets all of them. But most people choose a set of shelves and bins in the garage as the most convenient and affordable solution.

If you do end up building a storage space, here are a few basic rules to follow:

- > Chrome "meat rack" shelving is good, because it allows airflow around the stores.
- > Wooden shelves are also good, especially if you can make cabinets by putting doors on them.
- > Keeping canned foods in the dark helps inhibit any bacterial growth and helps keep foods at a constant temperature.
- > Keep adequate room on the shelves, especially around dried foods.
- > Don't store food in paper or cardboard containers on concrete floors. Water condenses and wicks up through the concrete.
- > If you use metal trash cans for bulk storage,

be sure the lids are tightly bound to the cans. Rubber tie-downs work well for this.

MEALS READY TO EAT

If you have a lot of money to spend and you want to stock up on pre-made meals, this is easy to do. Prepared survival rations are stackable, will keep a long time, and everything is already included. The down side is that they're not very appetizing and they cost a lot, compared to doing your own storage.

If you want to stock up on emergency meals, there are many online outlets (and perhaps some advertisers in this magazine) that can help you. Among the vendors are:

majorsurplus.com ≥ cabelas.com mypatriotsupply.com

Another Benefit to

One benefit you might not expect from

cooking.

THE BEST WAY TO KEEP MEAT

Without a doubt, the best way to store meat is alive and walking around! This is just one reason that becoming proficient at fishing, trapping, and hunting should be on your

> list of personal skills to develop. For instance, a crayfish trap can get

you some fresh meat in most of North America and costs about \$10. Just throw some old food scraps into it and leave it overnight in a practicing food storage is that the process deep, rocky place in a creek or pond. Ask around the fishing shops in your area, and vou'll get some tips about where to find crawdads. The same is true of basic fish-

> ing gear: You can pick up these tools at garage sales and thrift stores for a song and add them to your arsenal of food-acquisition supplies. Fish will stay fresh until you catch it. Hunting, on the other hand, takes quite a bit more training and preparation. That skill has been prized since before recorded history.

THE STORAGE SOLUTION

Keeping a stash of stored foods just makes good sense. It doesn't matter if you're living on a remote homestead or an apartment in midtown Manhattan. Having a little extra food stashed away is a cheap insurance policy against going hungry. Every year, you can see people fighting over the last box of corn flakes somewhere in America for no good reason—why should that ever be you?

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Left of Bang

Situational Awareness Can Mean the Difference Between Life and Death

By Patrick Van Horne and Jason A. Riley

Profiling. You've heard of it, mostly as a technique used by law enforcement and security personnel to identify individuals who are more likely to be involved in criminal or potentially threatening acts.

That type of profiling is primarily based on the "looks like a duck, acts like a duck, must be a duck" approach and gut feeling theory. It's also considered very un-PC and is condemned in some circles. Those same circles will say there is little basis in science to show that profiling is at all effective.

Left of Bang contradicts that position with both science and plenty of anecdotal evidence. The book is about profiling, but not the type that makes critics disparage it as biased due to race, ethnicity, or religion. This is profiling based on human nature—and that is universal.

Combat Profiling

The term, "combat profiling," was developed for the USMC Combat Hunter training program. Combat profiling is not about taking action based on appearances—or, at least, not based entirely on appearances. It is more about honing your senses and taking appropriate action based on the subtle clues provided by the behavior of those in your environment.

Combat profiling is understanding what your gut is telling you, such as knowing that a suspect's hands patting or touching his waistband is an indicator of a concealed weapon or that the nervousness and discomfort exhibited by a car's driver might mean more than just a reaction to being auestioned.

For a police officer or a soldier, these could be life-saving observations, but recognizing how what he saw tipped him off also allows him to articulate

and justify his actions in later reports. For a civilian, it might be as simple as recognizing that a fight is about to break out and having sufficient time to get out of the way.

Profiling and Survival

What does profiling have to do with prepping and survival? Combat profiling is, at its most basic, about situational awareness. During a natural or manmade disaster, being situationally aware might mean the difference between life and death. For instance, had the victims been more situationally aware, the shooting that took place on live TV in August of this year might have had a different outcome. Part five, section five, "Staving Left of Bang: Attacks From Within," specifically covers "green on blue" incidents, or workplace violence.

The book's title refers to avoiding a negative outcome by taking action before the bomb goes off, rather than via after-the-fact, Monday-morning quarterbacking. Think of the number line used in math class to teach positive and negative numbers: 0 is the "bang," so any actions taken on the negative number side of the 0 are "left of bang."

Parts one and two of the book cover the basics of what combat profiling is and why it is necessary; parts three, four, and five get to the how-to details. This is most definitely a textbook; reading it will give you insight for practicing the techniques that might save your life.

How many times have you felt that "something wasn't right," yet only recognized that feeling retroactively? Learning what the authors have to teach can help you act on that feeling—"left of bang"—rather than wondering later what you might have done differently.



Buy It Left of Bang Patrick Van Horne and Jason A Riley amazon.com \$16.86





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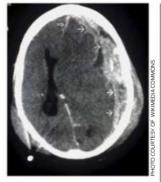
What Happens to Your Brain During a Concussion?

)) It had been raining for most of the morning, but you were still three miles from camp with intentions of reaching it within the hour. A simple misstep on a wet boulder sent you tumbling down into a jumble of rocks below. Landing on your head, you were knocked unconscious for only a moment. When you awoke, you were dazed but better.

You probably experienced a concussion and should seek medical attention.

Falls, accidents, and blunt-force trauma to the head are just a few ways the brain can suffer from a concussion. Although there might be cuts or bruises on the head or face, there might be no other visible signs of a brain injury.

Normally, we associate losing consciousness with a concussion, but not all concussion victims follow this path. Some might feel quite normal (despite the possible headache) and not know they are concussed. Similarly, they might recover in only a couple of hours from a light concussion, while some might take weeks or months to fully recover.



The single arrow on this CT scan shows where the brain has been bleeding from a severe concussion. The double arrow shows where the brain has shifted past its centerline. This is evidence of severe trauma to the head.

Although a victim of concussion will fully recover, one thing is for sure: Repeated concussions will cause permanent and irrevocable brain damage.

What Happens During a Concussion?

You brain is a soft lump of tissue that is surprisingly robust in some respects but can be very fragile at times. It is cushioned from bumping into your skull by being suspending in spinal fluid. Under normal activity, this is remarkably effective.

However, if you are hit hard in the head, it isn't thick enough to keep your brain from crashing into the inside of your skull. The resulting contusions (there will be two bruises on the brain-one from the impact and a second one on the opposite side where the brain collided with the skull) comprise the concussion that affects those areas of your brain.

How to Treat a Concussion

Assuming proper medical attention is far away and proper CT and MRI scans are unattainable, the best

Symptoms of a Concussion

- > loss of consciousness
- > unclear thinking
- > headache
- > blurry vision
- > balance problems
- > dizziness
- > nausea or vomiting
- > impaired short-term memory
- > lack of energy
- > easily upset or confused

treatment for a suspected concussion is rest. And "rest" here means doing absolutely nothing. Any activity (such as reading or watching TV) keeps your brain active. The idea is to slow down your cognitive activity so the brain can repair itself.

Use ice for any swelling. Avoid alcohol, and get plenty of sleep at night.

If the victim is awake and having a lucid conversation, don't worry about them going to sleep and slipping into a coma. This theory has been debunked. Sleeping is fine—as long as the concussion victim is awakened every couple of hours.

Concussion Prevention

Accidents happen, and sometimes, there is nothing you can do about them. However, you can educate yourself about the symptoms of a concussion, and you can take precautions when you are in an environment or involved in an activity where the chance of trauma to the head is higher than normal (sports, for example. Always wear a helmet and appropriate safety equipment).



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